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Uph(old)ing Customs



Karan Manral
Assistant Editor

"There is no reason why customs duties should be applied to products which are just not manufactured indigenously"

The Indian government recently announced its discovery of the fact that over 80 per cent of cell phone users in India are using instruments that were purchased from the gray market.

While this might be a surprise to some, it isn't exactly news. Every major metro has its own version of the 'smugglers arcade'—a Palika Bazaar in Delhi or a Heera Panna in Mumbai—where people flock to buy anything from the latest Nokia handset to the PlayStation 2 for a reasonable price.

And this also holds true for the computer industry in India. The difference in the price of a product in the US and here is considerable. The main reason for the differential obviously is the customs duties levied on products that are imported into India. A handheld computer that costs a relatively affordable Rs 8,000 in Singapore ends up costing you about Rs 15,000 by the time it arrives on our shores.

Is it any surprise then that there exists a thriving gray market for digital devices? After all, the alternative is to settle for something that is older or lacks features compared to another that we would prefer. This has also resulted in the Indian consumers having to accept, in some cases, obsolete technology products that do not find markets in other parts of the world.

The initial purpose of customs duties was to protect the fledgling Indian industry and create an environment in which it could grow. While there are still instances in which such a philosophy makes sense, globalisation means that in some cases it has outlived its purpose.

Eliminating customs duties might not make sense for products like desktop PCs because there exists a thriving industry of local assemblers and manufacturers, but there is no reason that the same rule be applied to components like processors and graphics cards or other products like digital cameras, which are just not manufactured indigenously. The likelihood of an Indian manufacturer deciding to develop a processor that takes on Intel's best is extremely remote.

In the current context, it really makes sense for the government to completely eliminate customs duties for products or components that are not being manufactured in India. This would eliminate the need for the existence of the gray market and will also help us get more value for the rupee that we spend.



karan_manral@jasubhai.com



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Inside the CDs

Software

PhotoPlus 5

Get your hands on the full, free version of Photoplus 5 and really dig into all



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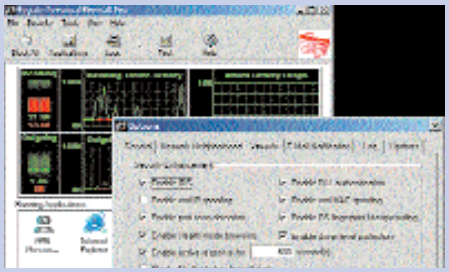
PLUS

FileAmigo LE v2.3.0, Windows Help Designer v3.1.24, MusIRC v4.3, Stellar Phoenix v8.0

30 FREE Software

All that's FREE

If you're looking for some alternatives to expensive commercial software then we have just the round up for you. Browse through this extensive list of 30 free software under various categories including HTML editors, Hardware monitoring tools, audio encoders/converters and more





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■ A bunch of newsletters on the hottest products out there

Bookmarks

■ Take a look at what the future holds for you with a Tarot reading from these horoscope sites

Test Drive

■ 30 of the best free software that can help you work smarter and save you some money too.

Arena: Top Gun

Serious Sam: The Second Encounter

The locations may be different, the weapons more effective but the object remains the same. Its time to get your hands bloody again with this highly addictive first person shooter. And this time round there are a lot more bad guys to put away!

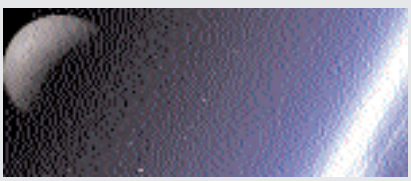


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Shake your body to these tracks featuring Gorgeous Girl, Icebird and John Davies and Nick James

Gallery

Go on a treasure hunt for the coolest of wallpapers, screensavers, themes and Winamp skins.



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The Internet is a treasure trove of resources for designers. We guide you on where you can find the tools you need to unleash your creativity. Go ahead and become a master of digital artistry.

Web Special

A Window to Linux

Struggling with learning to use Linux? Let KDE make your day.
Our detailed workshop might tempt you to give up on Windows.

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news feed

DIGIT MARCH 2002

hypethesis

■ What is Lindows?
Lindows is a Linux-based operating system that can run both Linux and Windows applications. It's a move towards bringing Linux to the desktop and getting more users use the Linux OS.

■ Why is it popular?
All popular Windows applications such as MS Office will run on the Lindows platform. Full compatibility would be achieved within a year for all popular Windows applications. It's in the news not only because of its functionality in running Windows applications, but also due to the fact that Microsoft is up against Lindows to withdraw its brand name, as it rhymes with Windows!

■ When will it be released?
The preview version has been released with the commercial version available for $99. Visit ***www.lindows.com*** for more information.

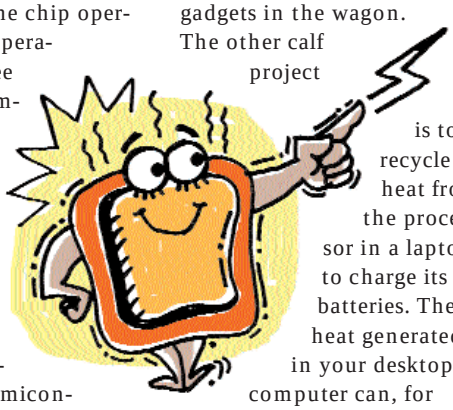
snapshot

Only 2% of Indian Net users shop online compared to a global average of 31%

Source: *NASSCOM*

Morphing Heat into Electricity

MIT has developed a microchip which can transform heat into electricity. Undergoing tests currently, the chip operates at a low temperature of 200 degree centigrade as compared to vacuum tube electrodes that require 1000 degree centigrade to produce a miniscule current. The Indium antimonide-based semiconductor would be induced for a scattering chain reaction that would turn heat into current. The inventors are aiming at tapping heat from the car's engine to provide electricity to other electronic gadgets in the wagon. The other calf project is to recycle heat from the processor in a laptop to charge its batteries. The heat generated in your desktop computer can, for example, be used to power a CD-ROM drive or to amplify the sound of the speakers.



Supermarket Navigator

If you've ever stood in the middle of the supermarket aisle, confused and wondering about your shopping list, then maybe the Klever-Kart will be useful. This is an electronic gadget attached to your shopping basket and its purpose is to inform you about the products in the shopping mall. So if you missed that raspberry jam, it will tell you where it is. With customer loyalty cards inserted into the Klever-Kart system, this supermarket navigator identifies the user handling the basket and provides personalised information to aid shopping. These cards track what product and brand a customer buys as well as factors such as where, when and how much money a customer spends. Call it convenience or call it snooping—the result is helping you shop. Or is it really?



PSX finally arrives

The PSX is the first PlayStation console to be launched in India, with a partnership between Sony India and Milestone Interactive. The console is available in retail at an asking price of Rs 7,990, including the Dualshock analog controller and a complementary game. The PSX, first introduced in 1995, has sold around 88 million consoles worldwide.

End of Spam?

Truste, a non-profit organisation, and Eprivacy Inc have launched a service called Postiva aimed at combating spam. The group is negotiating with e-mail program creators to introduce a new concept to stop spam. And what's the concept? Eliminating spammers from legitimate commercial mail by attaching digital signatures with the e-mail sent by any user. This way, the e-mail service providers can automatically eliminate spam mail from legitimate commercial mail. Companies have to register with the group to get the hardware device that attaches the digital signature to the e-mail. Microsoft is the first company to endorse this service and is trying to implement spam-free mail service for MSN users. But would this move really translate into the end of all spam, even if consumers pay extra?

■ 37 million Americans trade music files ■ IBM discontinues Thinkpad Transnote ■ MIT institutes Dewang Mehta award for innovations in IT

Vibration White Finger

Doctors in Britain have judged that playing games using gaming consoles is harmful to health. The latest hand-arm vibration syndrome, called Vibration White Finger, afflicted a 15-year-old boy in London due to prolonged usage of a Sony PlayStation games console. He played for as many as seven hours a day. Doctors have lodged a bill with the British Medical Journal asking for such products to be released with a statutory warning.

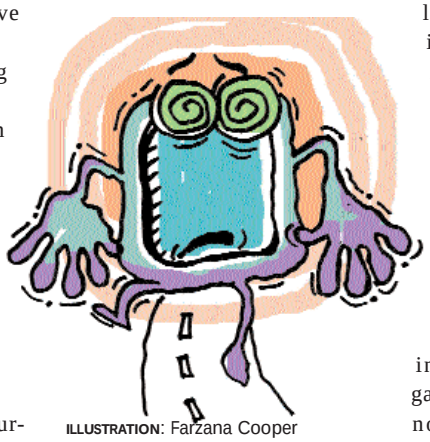


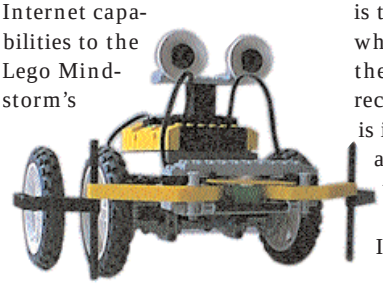
ILLUSTRATION: Farzana Cooper

This syndrome also occurs as a result of prolonged use of pneumatic industrial equipments. In racing and other driving games the gamepad vibrates to give the rumble effect. This gives the player the feeling that he/she is actually driving the vehicle on the screen.

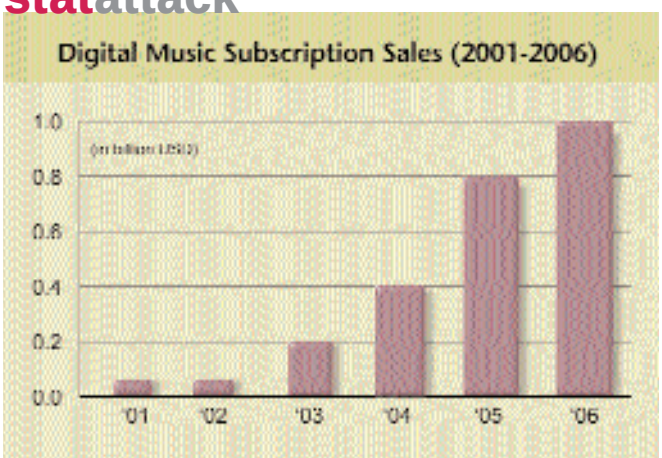
Sony already has taken the issue into consideration and has started releasing statutory warnings on its gaming devices. Users are now advised to take a 15-minute break after every hour of using the console and gamepad now.

Hyper robot

Olaf Christ has laid the foundation for what he claims to be an RCX (Robot Command Explorer). By transferring Internet capabilities to the Lego Mindstorm's platform, Christ has created the first RCX ever. Lego is a robot with brains, who has been extremely popular with hobbyists and hackers. RCX is the interface through which the PC connects to the robot and sends and receives data packets. Christ is in the process of building a Lego brick Web server that could enable the control of robots through the Internet.



statattack



Source: *www.jmm.com*

Rejuvenating Batteries

Imagine charging a battery with a hand-powered pump. This is what Max Smith, an American developer, has imagined with the StepCharger, a product which generates 20 minutes of battery power when you brisk the pump for five minutes. This device can rejuvenate the replaceable battery in any electronic device—mobile phone, video camera, digital camera, MP3 player, etc.

Bananas over Banias

Intel's Israel operation is working on a new laptop processor to enable seamlessly connectivity with any available cellular network for accessing the Net without a modem. Code-named "Bania", this laptop processor is slated for release in Jan 2003, and hopes to realise the dream of total connectivity to the Net—anytime, anyplace.

redalert

Don't get giggy

This time around, a JavaScript-based virus threatens to clean your hard disk. The travel mode for Gigger is MS Outlook and mIRC. It spreads across the Internet via these applications. The virus attempts to mail itself to all your contacts as a security update from Microsoft. It usually reaches the recipient with a subject line 'MS Outlook update' along with an attachment 'mmsn_offline.htm'. Microsoft often releases patches and updates through its sites so look out for any e-mail with a similar subject line and delete it. Protection is available with all major anti-virus vendors.

Malicious Morpheus

The popular file sharing software, Morpheus, has a security hole, which throws open all your personal details to the outside world. The security hole allows hackers to generate a random list from the 9-million user base. The hacker can then access the victim's computer and copy files from any drive on his/her computer. The privacy risk was reported first to BBC news online by a group of security experts. Since the software is caught up in copyright issues like Napster, there is no security patch available as of now.

snapshot

13% of India's adult population accesses the Net

Source: *NASSCOM*

■ Palm promises Macintosh compatibility with PDAs ■ BPL mobile 5th provider of GPRS in the world ■ GeForce4 released ■ HECL has launched

Of **AOL** and **Interoperability**

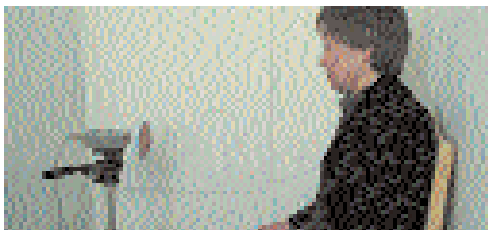
AOL is no stranger to interoperability issues. The latest casualty in the instant messaging phenomenon is Trillian, which allows messaging applications from Yahoo!, MSN, and AIM to be accessed through one interface. AOL claims that accessing its software service through Trillian for messaging purposes is the same as hacking into its software. Similar incidents have happened with AOL in the past. The company considered this a security breach and blocked Trillian from accessing its software, but at the same time, it continues conducting research to create interoperable services. AOL plans to come up with something similar to the e-mail (wherein



users can use disparate services but still contact each other). Meanwhile, AOL is restructuring its music and video products business in India and has approached FIPB to set up a subsidiary.

Wireless ECG

A student at the University of Sussex, UK, has built a sensor that can pick up your heartbeat without making any physical contact with your body. The device can pick up changes in the electric field in the air due to a shift in voltages on



the skin surface. This is called the displacement current, which is used for drawing the ECG graphs. The sensor in this device is a powerful copper disc, 1 cm in diameter and capable of picking up your heartbeat even at a distance of a metre. The impedance of the sensor was made 100 times higher than that of air in order to retain the signals unlike in the usual ECG sensors, which drain the electrical signals. The student at the helm of this project states that normal ECG suffers a distortion since the skin retards the flow of electrical signals. The device can be used to monitor patients, such as fire accident victims, who cannot be touched while treatment.

Visual Studio .NET in India

Microsoft's .NET strategy for online services has been at the centre of considerable excitement, debate and even apprehension for a while now. The much-touted Visual Studio .NET, which is a tool targeted at developing Web services specifically for the .NET platform, was finally released on 13th of February 2002 in India. The toolkit supports nearly 20 programming languages, including the already popular Visual C++, Java and newer ones like C#. As an increasing number of developers and companies look at the development of Web services, this will allow the use of existing skills to move on to the Web services platforms. A true developer tool, but God knows what the hidden tag is.

heroes

PALM
Palm scores a winner with the new i705 wireless PDA

USB 2.0
Speeding ahead with 480 Mbps

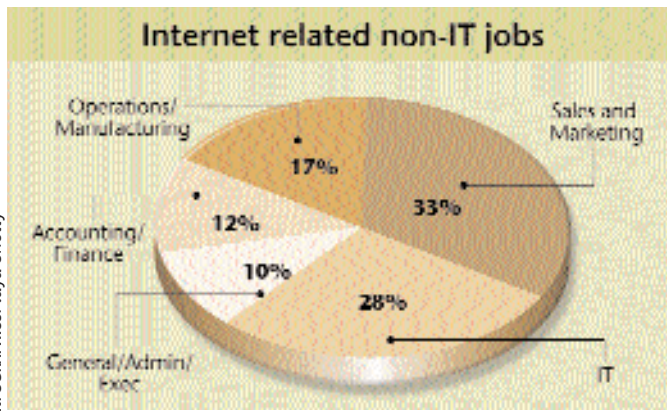
PIXAR
Animation stalwart on a high after the release of the blockbuster, *Monster Inc*

zeroes

MPEG-4
Institution of usage fees for streaming MPEG-4 dampens enthusiasm for the format

MICROSOFT
New Windows licensing rules may impose harsher terms on PC manufacturers

statattack



INFOGRAPHICS: Jaya Shetty

Source: *www.internetindicators.com*

Cracking XP

Windows Product Activation was introduced as a move to prevent piracy of Windows XP. This supposedly watertight user authentication system has been recently put to shame by a key generating program that is able to produce valid activation keys that are accepted by the latest Windows OS. Microsoft is again faced with the task of devising a mechanism which will recognise the difference between genuine and cracked keys.

satellite-based broadband Internet access service in India ■ PDA-mobile phone combo Treo launched ■ European Union drops Intel anti-trust case

Tux on PS2

Sony is getting ready to release Linux OS kits. The company aims at helping Linux programmers develop applications based on the OS for the PS2. Starting May 2002, disks for installation of the OS and tools for developing applications for PS2 will be available commercially. The company plans to roll out the gaming console as an extended version with more common applications such as word processing and spreadsheet capabilities. Wait for the Tux to make its way into the game console market and you can start expecting some surprises.



Yours Vociferously

Usable voice recognition technology, after a lot of talk, has finally made an appearance. Dragon's Speech recognition software, version 6, has been launched in India featuring new technologies like NBS (Nothing But Sound), a tool that filters out fillers and intervals between dictations. This helps in the removal of unwanted words like 'umm' and 'uhh' which usually occur during dictation. Another great feature is the Acoustic Optimizer, which allows the software to learn from all the data that it has accumulated over time in order to render greater recognition accuracy. With Dragon Speech, connecting to hyperlinks, controlling the mouse, editing, etc are easy tasks—all you have to do is speak. Now if somebody will tell us the price...

Hands-free Mouse

Track IR hands-free mouse helps the physically challenged use the computer with relative ease. This device is suitable for people suffering from carpel tunnel syndrome. The mouse kit ships with a silver dot and a sensor—the sensor is an IR device that connects to your USB port and the silver dot is the medium through which the sensor picks up the reflection in order to move the cursor on the screen. The silver dot could be stuck on to your forehead (or any other part of your body that you can use to comfortably move the mouse). As you move your head, the silver dot moves along, and the IR sensor picks up the reflection from the sticker. The sensor then sends the data to move the cursor accordingly on the screen.



Studying genes with DNA computers

Olympus has released a practical DNA computer that can be used in the analysis of genes. A normal computer works on electrical impulses to process information, but the DNA computer relies on chemical reactions between fragments of DNA.

Multiple chemical reactions between strands of DNA can happen simultaneously leading to massive parallel computing capability. This capability is used in the DNA computer developed by Olympus to analyse genes, a task that requires enormous computing power.

The company developed the product in a joint venture called NovousGene which specialises in genome informatics. The computer



is divided into two segments—the Molecular Calculation component and the Electronic Calculation component.

The former analyses the genes, initiates chemical reactions and brings out DNA results while the latter does the extreme processing and analysis of the final results.

Olympus plans to test run the computer for a complete year and then hopes to provide the services in early 2003 on a commercial basis.

Flaw discovered in MSN

A hidden feature in MSN Messenger allows Internet Explorer users to be identified on the Microsoft Web sites. A clever netizen has found that a small VBScript or JavaScript code can easily reveal the user's details. The malicious feature can be abused by any Web master to obtain your username along with all the contacts. If the code fails to fetch the username it fetches the e-mail ID of the user and his contacts, making the situation worse. A small piece of software can make a registry entry in your computer that can throw open your messenger details



to its associated Web site. This malicious program can introduce a .org, .com or any other domain suffix to the registry and allow any site in that domain to access your Messenger details.

■ *Final Fantasy* moviemaker closes studio ■ Microsoft launches MSN mobile portals in Europe ■ ICANN releases .coop domain naming system

CHINESE crashes

Hackers have started sending a malformed message in Chinese characters that crash Siemens mobile phones. The security bug affects the 3568i (or below) range of Siemens cell phones. A rogue message sent to this mobile can render it useless. The message cannot be simply deleted. It can be deleted using a specific software that has to be downloaded from the Web. This seems very much like a sequel to the havoc wreaked on Nokia mobile phones in Japan last year.

snapshot

3 million

Internet subscribers in India as on March 2001.

Expected growth by 2003:

7.5 million

Source: *NASSCOM*

Security without privacy?



Pacific Northwest National Laboratory (PNNL) has developed a holographic imaging system for scanning people at airports for security purposes. The scanning is done through radio waves. The waves penetrate the clothing and the items concealed within. The reflected signals from the body and the items in your clothing are collected by a computer, which reconstructs the data into a 3D bitmap. Though this is an effective system, the person at the computer can see not only concealed items if any, but also a nude image of the person being scanned. This leads to privacy issues and PNNL is working on a software solution that can solve this issue.

Ultra high speed DSP

Texas Instruments is working on a 0.09-micron logic process that supports nine layers of copper interconnects with organo-silicate glass (OSG). The logic process will produce 400 million transistors on a single chip. The 90-nanometer process will allow the company to push the operation frequencies of its DSP and RISC processors to ultra high speeds. The new process was developed for 200 mm and 300 mm wafer fabrication.

tomorrow'stechnology

Itanium's third child—McKinley

This is the name of the latest server processor from Intel. Covering an area of 464 square millimetres, it is the largest processor ever made. The fabrications will not be easier than the earlier products—McKinley will not be a cheap processor. Intel researchers believe that it certainly is a mammoth task and a great challenge to produce chips of such surface area. McKinley, the third child in the Itanium series, will be followed by newer siblings; namely Madison, Montecito and Chicanos. The processor consists of a substantial amount of cache-data reservoirs near the processor for rapid data access. The chip would be integrated with a 3 MB level 3 cache, 256 KB level 2 cache and 32 KB level 1 cache, respectively. All these additions and integrations contribute to the size of the actual processor.

McKinley would be fabricated with 221 million transistors embedded on it. Intel adds that the success of the processor will depend on the availability of software that can squeeze out the capabilities of McKinley.

quoteworthy

"Linux can't beat Windows."
Bob Young, Red Hat Chairman

"Internet is 100 per cent backward from what it will be in 10 years from now."
Steve Ballmer,
President and CEO, Microsoft

"When a company is very small, you focus on the who, the what and the how... Over time you give up on the how, give up on the what, and focus on the who."
Jeff Bezos, CEO, Amazon.com

WhoIs?

■ Isamu Sanada

A Mac fanatic who has been creating speculative models of Apple products. He designed a laptop which gave a preview of the Titanium PowerBook G4 months before it was released. Sanada's Apple clones are remarkably accurate, down to details such as the CD/DVD drive slot and the stylish cooling vents.

■ How does he define his role?

He visualises himself as another Steve Jobs and would like to work for Apple for a meager salary of $1 per annum, which is incidentally Job's annual salary too.

■ What's his vision?

Apple has been creating PCs of the future and will always be revealing future PC concepts to the world. He believes that one day he will work with Apple, designing stylish Macs. Check out Sanada's work at ***www.applele.com***

■ Animated cartoons as Oscar nominees ■ IBM unleashes Meta Pad, a camouflaging computer ■ Kevin Mitnick to plead for HAM licenses

Missing the List

Dear Karan,
I noticed that you have stopped printing the full contents of your CDs in a sidebar in the magazine. I find this very disappointing as I used to cut and file the list for easy reference. Now I am unable to do so. Hope you start printing them again.

DONALD
Via e-mail

digit

Dear Donald,
We haven't entirely done away with that idea. While the 'Inside the CDs' page highlights the special content on the CDs, you can still find the full content of the Digit Interactive CDs at the back of the CD pouches.

Money Matters

Dear Karan,
While I largely agree with your editorial in the February issue, I have a few concerns of my own. You have proposed that companies could offer basic or older versions of software for a lower price. Though that may sound good, there are certain places where this approach may not work.

For example, I have to upgrade my operating system at some point of time. I simply cannot keep using Windows 95 (for which I have a license) with newer hardware for reasons of stability and compatibility. It is the same case with applications such as OCR software, system utilities and tools, which have to be upgraded if you have to keep abreast of the latest developments in technology.

Also, companies could sell software to large enterprises and commercial institutions at higher rates and subsidise the price for individual users.

HRISHIKESH THITE
Via e-mail

digit

Dear Hrishikesh,
My editorial suggested that companies could offer older software at better prices. Obviously this applies to software that have a certain amount of functionality and suitability. Wouldn't you be willing, for instance, to pay Rs 1,500 for an original copy of Windows Me? Or perhaps, Windows 2000 at Rs 3,000 that offers most of XP's functionality at half the price?

As far as your suggestion of subsidising the prices for individuals is concerned, it wouldn't be fair for a business to penalise their regular/large customers by over-charging them. The point is that while companies are trying to tackle the issue of piracy by reducing the price for their software, they need to re-evaluate their pricing strategies for older products that have already earned their share of development costs.

Magazine No 1

Dear Karan,
I have been a keen reader of your magazine for a long time. The February 2002 issue of Digit was simply great. All the articles were chosen perfectly and rendered beautifully.

The feature on DVDs in 'Technology Next' was smoothly written and did a great job of explaining the different standards and their significance. Droolmaal really did its job and had me salivating.

The article by Avina Lobo on how to earn money using the home PC was excellent. The 'Top 10 Downloads' really brought my PC up to the mark and the 'Test Drive' on CD-Writers was comprehensively done.

I could go on about the rest of the stories but I don't have enough words to congratulate the authors of the respective articles. All I can say is that you certainly know how to keep us glued to the magazine for hours together. Now I am assured that my decision to go for the two-year subscription has not been a bad one at all. Looking forward to more such wonderful issues.

Kudos to the entire Digit team.

JAYANTH
Via e-mail



digit

Dear Jayanth,
Shhhh! Not so loud, the team might let your praise go to their heads! And surely you wouldn't tolerate their complacency one bit. But seriously, such appreciation is what drives us to bring you the best technology magazine month after month.
Team Digit

The Web Site Story

Dear Sir,
I started my career as a professional Web designer and as a desktop designer a few months ago. The articles and tutorials provided in the earlier issues of your magazine relating to Web and multimedia designing were very helpful to me as a beginner in learning the tricks of the trade.

But today the magazine lacks articles that explain domain name registration, server side techniques, uploading Web pages to the server, etc which would be very helpful for a Web designer.

I request you to consider covering these subjects in forthcoming issues.

JAYASHRI K.V.
Via e-mail

digit

Dear Jayashri,
We've touched upon each of these issues in isolation, but you're right—we're still to feature a comprehensive article covering all aspects of registering and maintaining your Wseb server. We'll definitely cover it in one of the upcoming issues.

Double Standards

Hi Karan,
I was shocked to read the article '10 Crimes you may have committed' in your January issue. I think the article is a clear case of double standards at Digit. Most of what you have described as crimes (like illegal downloading, CD ripping) are topics on which you have yourself published articles educating your readers.

SHANTANU ADHICARY
Via e-mail



ILLUSTRATIONS: Mahes Benkar

digit

Dear Shantanu,
Double standards at Digit? We think not.

That particular article highlighted what the law has to say on these subjects. What that article is meant to do is show that thanks to archaic laws, almost anything that you do on your computer can be considered illegal...

Three cheers for Linux!

Dear Karan,
I was a bit disappointed with your editorial in the January 2002 issue. Being just 15 years old, I have far less experience than anyone in the Digit team, but I have been using Linux for over four years and I am a die-hard Linux lover.

When you refer to the constant need command prompt mode, you are forgetting the simplicity of using the excellent X Windows System, which comes bundled with almost all Linux distributions today. Also you haven't considered the fact that there are thousands of programs that come along with the Linux CD.For a magazine like Digit, which is considered by novices and experts as their monthly morsel of computing food, it is unjust to project Linux as a user-unfriendly operating system.

VIVEK SAXENA
Via e-mail

digit

Dear Vivek,
Like I mentioned in the editorial, while Linux has made great strides in usability over the last couple of years it still isn't close to the level of user friendliness that Microsoft has managed to achieve with Windows XP.

A long time Linux user like yourself would be familiar with the fact that despite the progress made by KDE and Gnome, the command line is still the most convenient (and in some cases the only) way to get things done in Linux.

Also, few of the applications that come bundled with the Linux distributions match up to their Windows counterparts in either feature sets or ease-of-use.

Short Bytes

Ask Away

Dear Sir,
While I am a reader of Digit, I'm not a subscriber of your magazine. I need some advice on buying a CD writer. Is the Smart Buyer's Forum on your Web site meant only for your subscribers, or can I also ask my questions there?

S. JATANIA
Via e-mail

Dear Jatania,
The Smart Buyer's Forum at thinkdigit.com is open to everyone. Just go ahead and post your question there and Agent 001 will get back to you with the advice you need.

Addicted!

Hi,
I have just finished the February issue of Digit. The problem is my addiction to Digit. It takes me a whole day to read it from end to end and another day to go through the CDs. Thanks a lot for issues like this and I hope you can keep it up.

SABYASACHI MUSTAFI
Via e-mail

Dear Sabyasachi,
Most of our readers claim that the issues occupy them for days on end. Are you sure that you didn't miss out on some of the magazine?!

Goof Ups

■ **Uh oh. We goofed. Although we mentioned The Sleuthhound! Pro 3.2 in the contents page of the February issue of Digit in the software section of the box 'Reviewed this month', we failed to carry it. However, the review is being carried in this issue in Bazaar.**

■ **Some of our readers have complained that the software .NET Framework SDK included in the Mindware CD does not function correctly. We apologise for the inconvenience caused. This will be carried again in the future.**

Notice any goof-ups? Write to goof@jasubhai.com

Send your letters marked 'Readers Letters' to the Digit office:
D-222/2, MIDC, TTC Industrial Estate, Om Sagar Building, Nerul, Navi Mumbai 400 706,
Phone: 022-7629191/9200; Fax: 022-7629224
E-mail: readersletters@jasubhai.com



The Future of WAR

The battleground of the future will not be soaked with human blood—intelligent machines will do the fighting, and the killing

The cutting edge of technology has affected the equations of a war so dramatically that the motivations and conventions of a typical 'war' have become vastly different from what they were earlier.Despite this apparent shift, the fundamental nature of war does not change with technology, and understanding how war does not change is key to understanding the art of war itself. In this article, we take the ancient Chinese wisdom of Shang Tsu, and draw parallels with the present day scenario of laser-guided bombs, night vision, mechanised warriors, and killer warplanes.

> Knowledge of the enemy's dispositions can only be obtained from other men
>
> The art of war

This statement needs some revision, especially in the wake of spy satellites, reconnaissance planes, and surveillance systems. Today's intelligence gathering is much more passive in nature, and doesn't involve using spies that much. Take the example of Echelon. Several credible reports suggest that this project attempts to capture staggering volumes of satellite, microwave, cellular, and fibre-optic traffic, including communications. This vast quantity of voice and data communications is then processed through sophisticated filtering technologies. Most of what is known—or believed to be known—about Echelon is based on rumours and allegations, such as the claims that the system intercepts 3 billion e-mails every day, or sorts through 90 per cent of the traffic on the Internet. Echelon's computers are supposedly capable of recognising key words, names, telephone numbers, and voices. They gather information from listening posts all around the world, with additional input from about 120 US satellites.

> The skillful soldier does not raise a second levy, neither are his supply-wagons loaded more than twice
>
> The art of war

The high-tech foot soldier of the near future will bear a closer resemblance to the Terminator. That is the promise of the Land Warrior, a 9-pound 'back-top' computer that manages a global positioning receiver, miniature camera, laser rangefinder, video and thermal weapons sights, and a radio. The 21st Century Land Warrior (21CLW) is the name given to the concept of new future military development for the man on the ground. This concept has been a study and a progressive objective for the past decade for many Western military forces. The weapon subsystem is built around the M-16/M-4 modular carbine. It has a laser range finder/digital compass, a daylight video camera, a laser aiming light, and a thermal sight.

Cables run from the battery-powered backpack to a soldier's helmet or sunglasses, where a tiny 'heads-up' display monitor is mounted, and his weapon holds video sight (for daytime), thermal sight (for nighttime) and laser rangefinder capabilities. Land Warrior is years away from the troops in the field, but its replacement is already on the drawing boards. The designers of Future Warrior 2025 think they can make individual infantrymen as deadly as tanks and much more comfortable than today's foot soldiers. One day in the future, a Marine may be able to send cockroach-like robotic critters into a building to send back video images of the enemy. These creatures could also set off



The 21st Century Land Warrior, equipped with a GPS receiver, miniature camera, laser rangefinder, video and thermal weapons sights, and radio

non-lethal intoxicants to subdue the enemy.

The modern soldier on the ground still has to wade through mud, endure rough terrain and fight enemies, just the way armies fought with each other throughout the centuries. The difference is that the soldier of today has heightened senses, highly accurate and effective weapons, and an extensive array of communication technologies. Body armour gets stronger and lighter; rifles, though still based on technology that's more than 50 years old, are now much more effective and equipped.

> Let your plans be dark and impenetrable as night, and when you move, fall like a thunderbolt
>
> The art of war

As air power has developed, so have the armaments that give aircrafts their firepower. Missile systems offer a mixture of effects and ranges depending on the needs of the mission. Close-range sidewinders, long-range cruise missiles travelling several thousands of kilometres, laser guided bombs (LGB) that can be targeted from the air or by ground forces—the arsenal for air attack is ever increasing.

Laser guided bombs (LGB) such as the GBU-27 are specifically designed to be used with the F-117 Stealth Fighter. It is supplied with a 2000-pound bomb as armament, which holds 550 pounds of high explosive. A delayed action tail fuse allows the bomb to penetrate 6 feet of reinforced concrete before detonation. In association with the specialist F-117 aircraft, the GBU-27 can hit a square metre target from an altitude of 25,000 feet.

> All warfare is based on deception
>
> The art of war

Stealth. The ability to strike quickly and with surprise. Today's surface-to-air (SAM) missiles are equipped with tracking devices that are more sensitive—these missiles are able to chase down aircrafts from hundreds of miles away. So how does a warplane avoid detection? How do you make a huge plane disappear?

That was the challenge when research for the B-2 bomber began in 1981: to make an airplane invisible to the radar. The Pentagon originally wanted 132 planes. Only 21 were made. B-2 bombers are second-generation stealth bombers, made of carbon-graphite composites lighter than aluminium but stronger than steel. 136 separate computers onboard help the two crewmen handle the complex plane. With just one air refuelling, a B-2 can reach and strike accurately any target in the world. It has a capacity to carry up to 40,000 pound of weapons, including conventional and nuclear weapons, precision-guided munitions, gravity bombs and a range of maritime weapons. The B-2 can also carry the AGM-129 Advanced Cruise Missile,

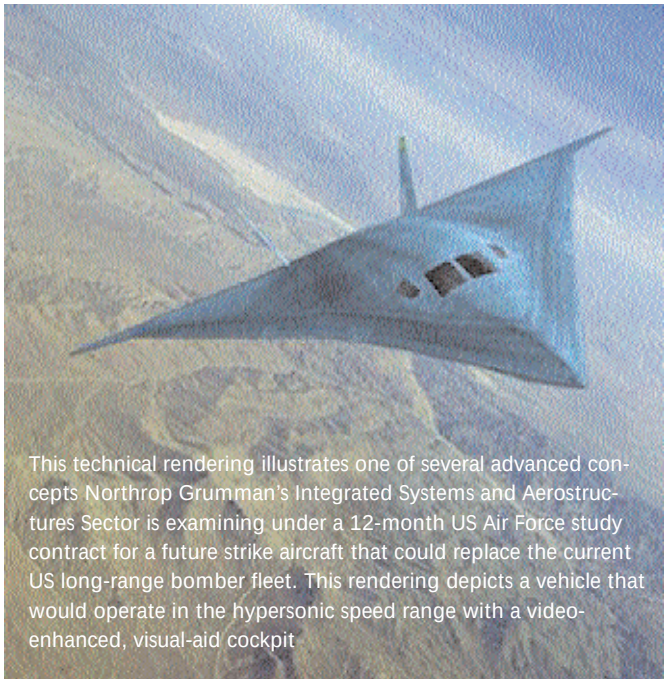
Information Warfare

Information warfare is a battle no longer done on a physical plane but a virtual one. Information technology is being developed as a weapon for 'logistics attack' as a means of disrupting the infrastructure on which an enemy's military apparatus depends. However, information warfare is a double-edged sword—the countries most capable of waging it are also the countries most susceptible to it.

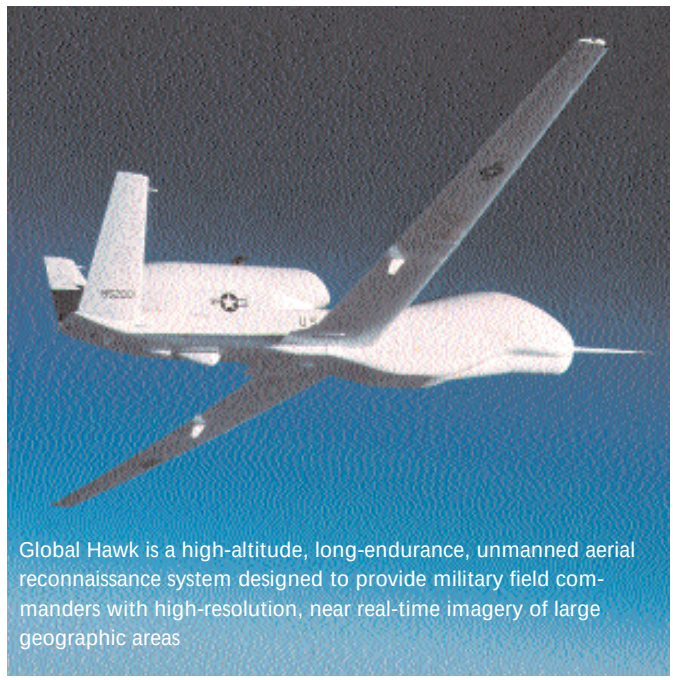


Information warfare opens up new horizons of cost effectiveness for terrorists and enemy governments. Attacks on information technology are unsettlingly easy to carry out. The means are relatively inexpensive, easy to smuggle, virtually untraceable, and completely deniable. This, coupled with the fact that the civilian networks are the most attractive to terrorists since they are the most vulnerable, makes 'Infowar' the perfect weapon in any terrorist's arsenal.

Future weapons of information warfare could include nano machines, electronic jamming, high-energy radio frequency guns, and electromagnetic pulse bombs.



This technical rendering illustrates one of several advanced concepts Northrop Grumman's Integrated Systems and Aerostructures Sector is examining under a 12-month US Air Force study contract for a future strike aircraft that could replace the current US long-range bomber fleet. This rendering depicts a vehicle that would operate in the hypersonic speed range with a video-enhanced, visual-aid cockpit



Global Hawk is a high-altitude, long-endurance, unmanned aerial reconnaissance system designed to provide military field commanders with high-resolution, near real-time imagery of large geographic areas

which is a strategic cruise missile with range estimated at up to 1,500 miles.

Given its radar-evading ability, the Stealth fighter has been used in attacks deep behind enemy lines. It is said that the first Iraqi anti-aircraft weapons were fired after bombs from the F-117s hit their targets with an astounding rate of success. F-117s were the first aircrafts to strike Baghdad in the opening minutes of the Gulf war. Footage from onboard cameras shows a number of 200-pound bombs from F-117s scoring direct hits on Iraqi strategic targets and mobile missile launchers. Air Force commanders reported that the F-117 flew 3 per cent of total missions but destroyed over 43 per cent of total targets.

> Be subtle! Be subtle! And use your spies for every kind of business
>
> The art of war

Robot planes called Predators circled slowly in the skies above Afghanistan, transmitting live images of Taliban troops with no risk to the pilots. Predators are capable of staying aloft for 40 hours, lingering over no-man's land, snooping on a single target or a hundred of them and transmitting back vivid, live pictures. This plane is a sign of things to come, when troops made of metal and electronics do the fighting, not humans. It's only a matter of time before fighter planes without any pilots joust in some robot dogfight in the sky.

iRobot of Somerville, Massachusetts, is a small machine modelled on the crab, which is devoted to minesweeping. It can be used in amphibious assaults as it has the ability to navigate difficult terrain, attach itself to a mine, and detonate itself. To imitate an ant farm, iRobot is building a swarm of tiny robots called 'joeys'. Possessing very simple intelligence, the joeys are meant to work together to explore a battlefield or disaster area. They communicate by 'pheromones' which are transmitted by infrared beacons, and each joey has a small tank of water, called a bladder, from which it dribbles a trail that shows other joeys where it has gone. Like ants, the joeys know little of their universe. But when they find something interesting, they tell others around them.

The most incredible statistic of the Afghanistan war was that the first American soldier died after three months of combat! Thanks to the Predator spy plane and other unmanned drones and gunships along with satellites and thermal imaging devices, battlefield robots can do all the dirty work in future wars—from minesweeping to reconnaissance, from killing to guarding. They would be exposed in risky situations, and would be expendable.



With the thermal sight at night or video sight during the day, the 21st Century Land Warrior can shoot with great accuracy while exposing only his hands

The challenge lies in designing machines with enough intelligence and mobility to handle the unpredictability of the real world. At Sandia Lab in New Mexico, scientists are at work to start a robotics revolution by 2020, with advances in biometrics, swarm intelligence and AI.

Such advances could further divide the gap between warring factions. As it is, the actual battles today are not decisive or heroic anymore, and a proxy war through machines would make war even more confusing, distant, and one-sided. The actual battles, with its paradoxes, and infomania, would seem best described as postmodern.

SRIRAM SHARMA

Gear Up for GENi

Hot Technologies Cool Products

Cutting-edge technology becomes mainstream... GENi promises to showcase some of the best droolmaal available in the Indian market. Here's a look at some of the select pieces. Check out www.zdnetindia.com/geni for more.

Nokia 7650
Photos on the phone

A colour display with complete GUI control, a digital camera, adherence to wireless connectivity standards such as Bluetooth, infrared and GSM, support for GPRS and HSCD networks... what more can you ask of a phone!

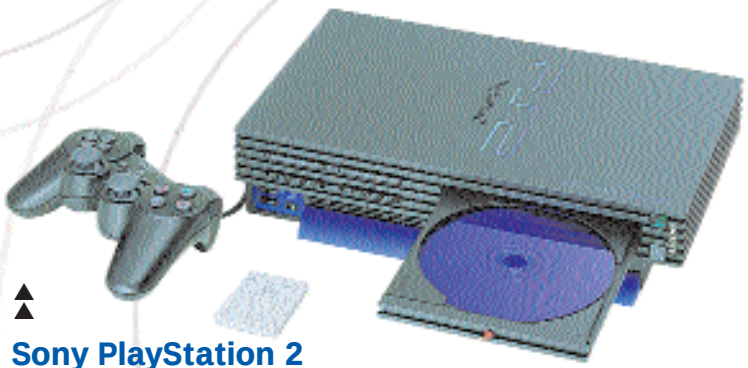
With a potential for surfing the Net and working with e-mail and images, Nokia 7650 is as compact and feature-rich as a phone can get.





Thomson 44RW65ES Rear Projection Systems
More of the screen, more fun!

Nothing really matches the joy of watching a movie on a big screen, but Thomson's new Rear Projection display system comes close. Boasting of a 112 cm size, this 16:9 aspect display system features a 100 Hz digital scan, providing you the sharpest video displays you'll ever see. It also pleases the audiophile in you with an integrated 80 Watt Virtual Dolby Surround audio system. Get that eye-full right in the comfort of your living room.



Sony PlayStation 2
Gaming power

Packing one of the most powerful graphics engines on the planet, the PlayStation 2 with its 48 GBps memory bandwidth can render movie-quality images in real time and also comes with support for DVD playback. All this is made possible with innovative rendering features in the 150 MHz graphics processor coupled with 32 MB of dedicated RDRAM. Get ready for a unique gaming experience.

LG GR 1267 Internet Refrigerator

The coolest one

The LG i-Refrigerator takes your kitchen to the next level of automation. It lets you connect via LAN, ADSL, modem or even cable and browse the Net via the integrated 15.1-inch touch-sensitive screen. A built-in camera and microphone allow you to videoconference. Sporting full-colour functionality and a GUI-driven interface, you can check your e-mail and grab a snack simultaneously!





Nike psa[play120

Just play it

A digital audio player for the music-loving sportsman, the MP3/WMA player features 64 MB of built-in Flash memory and can be worn on your person. The LCD Screen on the remote control displays track information and controls the functions. Since it has no moving parts, it is skip-resistant and highly resilient to physical shocks.

Sony AIBO ERS-220

My dog!

Technology turns man's best friend in Sony AIBO, a robo-pet that can be trained to recognise its owner's voice and face and is sensitive to its environment. Equipped with a 64-bit RISC processor, advanced robotics, and numerous pressure, light and motion sensors, the AIBO gives you the pleasure of owning a pet without having to worry about toilet training it!



10 Reasons You Should Buy a Mac And 5 Reasons Why You Shouldn't!

There is one thing you simply can't deny: a Mac looks as good as it performs, if not better. Since its arrival with a bang in 1984, the computing scene has never been the same. A whole generation of Mac users—over a remarkably consistent period of innovation in design and quality—turned into a cult. A cult, which in the form of millions of Mac users worldwide, keeps the tradition and spirit of an Apple alive. Maybe that's why the designers at the company have managed to jolt, electrify and revolutionise the computing world time and again, and so has the renowned and rebounding Steve Jobs. Apple has left no stone unturned in its attempts to make sure that radical, aesthetic and offbeat designs work, and work better than anything else! One need not conform. The best part is that over time, Apple's ideology hasn't changed. The company still wants to think different, combine eye-appeal with rock-stable performance, and offer a choice in the Windows-weary world. But enough already, let's see why owning a Mac is much more fun than anything else!

1 Steady as a horse

Forget what you learned. A Mac is stable. It does not 'hang' like the PCs of 'other' people. Like a horse, the Mac's stability increases, and as Apple gets a firmer footing in the computing market, it releases products like the UNIX-based Mac OS X, which is far more stable than its predecessors. The fact of the matter is that iMac is more stable than Windows XP, professional or home edition.

2 Prettier than the prettiest

Apple is the master of industrial design. At Apple, you don't make ordinary-looking products. Conversely, are you that proud of your individuality? The Mac cult will want you to believe that a Mac is more than a computer: it is a lifestyle. Maybe you don't want to impress your girlfriend like that Compaq ad shows, but what the heck, maybe you do want to. A case in point is that iMac has won several international design awards, which shouldn't look bad in anybody's room. Don't forget the 'Neighbour's envy, owner's pride' line that Onida made famous. And face it, a lot of things sell in the world today just because they are pretty.

3 Originally different

Do you hang out with the crowd at the risk of not being original? Do you have it in you to innovate? Are you afraid of change? What is your personality like? Apple's personality as reflected through its products has been worthy of attracting a cult. An Apple is for those who realise what it means to be different, especially creative people, who need to be different in order to make a difference.

4 Always outperforming

The Mac outperforms, consistently, and in all real-world applications despite lower processor clock speeds. It has proved time and again that the processor speeds don't really matter when it comes to bringing home the bacon. A Mac is capable of running more 'heavy' applications at the same time—and it does it faster than ordinary PCs. This, if nothing else, is the one big reason why professionals, especially designers, love the Mac. They worship it. True colour reproduction is another factor that adds to the cult worship. What they see on the screen is what they get in real life. It's hard not to get affected by the Mac's unblemished performance, if you own one.

➜

Mac Addicts

Hell's Angels is not the ultimate cult, in case you thought it was. You probably haven't met Mac owners yet. These are people absolutely passionate about what they are doing. They do not tolerate insults against a Mac easily, and you can't blame them. They are trying to do things differently, after all!

It's not common to overhear a conversation about an iMac in your college corridor. If you have worked on or owned a Mac, you'd know exactly what we mean—the exalted status, the enthusiasm brimming over when words issue from a frothy mouth talking animatedly about the latest iMac wonder...It's rare to see this in India because to get into this silly, spasmodic state, you have to be a part of the Mac addicts club. From the graceful simplicity of the iPod to the easy-to-install AirPort to the formidable OS X—Apple's idea behind all products and designs is a very simple and basic one: mix beauty with performance. An iMac is not a machine, it is a treat. Hence the addiction.

5 Simple, yet elegant

Apple made the GUI. A well-designed, neat, and easy graphical user interface makes all the difference between instant liking and disliking. An iMac is easy; it has won awards for best design and the designers have kept the utilitarian aspect in mind. You won't get lost in there trying to figure out what you were doing in the first place.

Chances are, you won't be put off by the new iMac. One wonders what the purpose of computing is if it's not keeping it easy and simple, yet elegant.

6 Easy to setup

It's easier and faster to set up a Mac than a Windows machine. This has been proved more than once in real time tests where the Mac took lesser time to set up and run than a Windows machine. The proprietary architecture adopted by Apple makes it easier and quicker for a user to set it up. The OS comes preinstalled and the connection points for the peripheral devices are clearly marked so that you can put a Mac together all by yourself.

7 It's cool

A community or a cult is always close-knit. Likewise, Mac users have, and will claim, more affinity within themselves than ordinary Windows users. In other words, it's cool to own a Mac. First of all, you've got to reach that position when you can afford it, and secondly, it looks so good and handles even better! What else does cool mean?

8 Plug and play

The Mac offers superb plug-and-play capabilities—no missing drivers, no resetting jumpers or bothersome IRQ conflicts, nothing—thanks to the complete control and clearly defined vision that Apple has for the architecture.

Apple had plug-and-play on their machines since the mid 1980s (Microsoft had plug-and-play only Windows 95 onwards). This early advantage has helped them perfect the technology to a very fine tune—you can hear it almost. Just plug in any number of devices to a Mac and get away with it—adding (or removing) hardware is not a problem with Macs.

9 It's virusproof

A Mac is comparatively more secure; it has limited vulnerability to viruses as compared to Windows. Mac users have been protected from most of the chaos wreaked by virulent viruses worldwide. The main reason is that there aren't many viruses, worms or Trojans around that target the Macintosh OS. The OS is very secure, as in, it's not lucrative enough for hackers to make viruses for the Mac.

10 Great multimedia capabilities

Games and multimedia look and sound great on a Mac. Though there are fewer games available for the Mac platform, the most popular games nowadays have also been ported to the Mac platform. The games that are available on both platforms (Windows and Mac) run really beautifully on a Mac. You get extremely realistic graphics and sound reproduction on Macs, which makes multimedia and movie playback quite an experience.

ILLUSTRATION: Ram



5 Reasons not to buy a Mac

There are several pitfalls a Mac user has to get used to, like money, which you need lots of, and service, which you hardly get in India, and perhaps the most important one: common availability. How many Apple showrooms have you seen? People definitely have reasons to stay with Windows, yet.

1 Far too expensive

The Windows world is not as expensive as Apple, delivers a reasonable performance, and more importantly, takes pains to welcome you. On the other hand, there are no assembled Macs available, and the price of an entry-level Mac desktop is Rs 58,000. Windows is cheap, and it sells.

2 Limited choice of software

If you are big, you can offer more choice. Compared to the PC platform, Mac has limited software available. Although you will get almost everything you need, the choice will still be lesser—it's a comparative difference, but it's still a difference. Microsoft offers a much wider choice.



C. Radhakrishnan

PHOTOGRAPHER AND MAC DEVOTEE

It's almost 80 per cent cheaper to buy a Mac from abroad than in India. The problem is that most of the local Mac vendors do not recognise the global warranty

3 Thin service

PC problems with Windows-based machines are easy to solve. Just call a technician and ask him/her to fix your computer. But Macintoshes require trained technicians to take care of them. Such technicians are unheard of in India, and for that matter, so are Apple showrooms. This single has been a major turn off for prospective buyers. The service factor has to improve, before anything else.

Landmarks @ Apple

- First steps: Apple I, the first commercial computer from Apple, is launched in April 1976.
- Tasting success: Apple II, the first computer to use a plastic case, including colour graphics support, is launched. It is Apple's first major commercial success.
- Mainstream GUI: Macintosh 128 k, the first affordable computer with a Graphical User Interface, comes out with a floppy drive.
- Stepping outside: The PowerBook series launched in '91 is a runaway success.
- Computing muscle: The PowerMac debuts in '94 and is the first computer to be powered by PowerPC processors.
- Winning consumers: The iMac made a million hearts skip a beat in May '98 and stormed the lower-end consumer market.
- Super powered: The PowerMac G4, a 'supercomputer on a chip', arrives in September '99, capable of executing more than a billion instructions per second.
- OS X: Releases in 2001 with a redesigned user interface (called Aqua) and the rock-solid UNIX core (called Darwin).

4 Non-upgradable

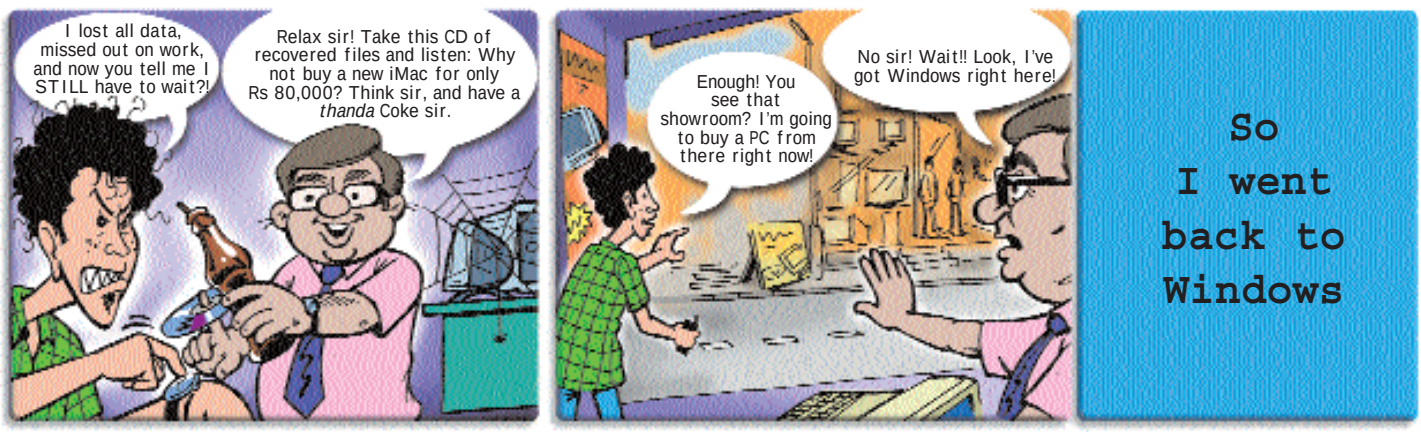
Macs, unlike Windows, are not meant to be upgraded, except probably for the hard disk and the RAM, and you can't do much of an upgrade on an iMac anyway. Windows, on the other hand, makes sure it offers you a choice (sometimes thrusts it at you) to upgrade. You can upgrade your way through the entire 9x series, literally. In short, if you have a hardware problem with your Mac in India, you are gone!

5 Not a great team player

While Apple constantly receives a lot of compliments from professional users all over the world, organisations have been wary of adopting Macs as the platform lacks tools—server applications, collaborative tools, and industrial strength database applications—that address the needs of any modern organisation.

So that's it, the points are all here for you to see and decide: is there room in your life for a Mac? If not, you can carry on and if yes, you'll have to change your lifestyle!

ANIL PATRICK R.

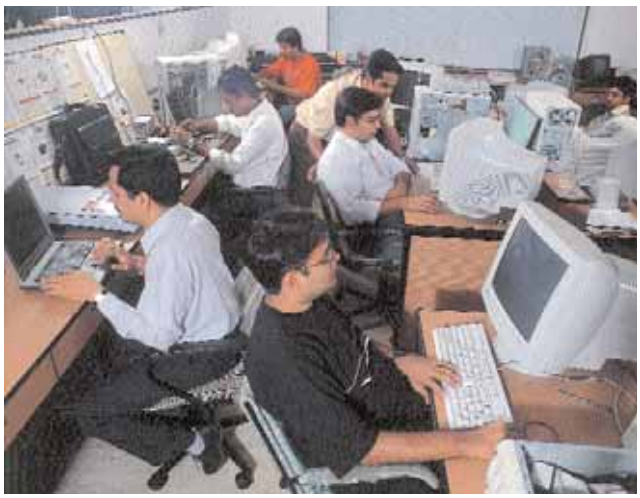


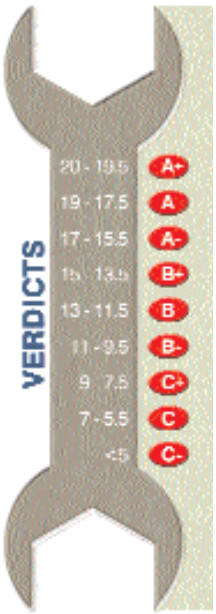
How we Test

It looks good and the technology is glitzy, but does it do the job?

Reviewers at the Digital Media Test & Research Centre (DMTRC) spend many manhours every month testing hardware and software to guide Digit readers to make an informed choice when faced with a buying decision. At the core of the tests is the usability and the relevence of the technology for the readers of Digit.

To ensure that the Indian readers do not have to compromise on qualiy, engineers at DMTRC evaluate and review the latest hardware, software and technology services in accordance with the most cutting-edge evaluation processes and methodologies used around the world.





Demystifying the ratings

The DMTRC conducts two kinds of tests/reviews in the Test Drive section of the magazine—standalone product reviews as well as comparison tests. The test process is elaborate. We test an assortment of hardware and software products from the Indian market, and the evaluation processes involve parameters such as sheer performance, build quality, value for money and the features of the product. A set of weightages are applied to these evaluation parameters to arrive at an overall score. The table given below is used in applying the overall grades to these products based upon the overall scores.

In the case of the comparison tests, the weightages are applied to the various test parameters according to their importance. This is explained in the magazine articles and in the Test Process section of the CD, where the benchmarking methodology is explained in detail.

The Awards

Digit rewards exceptional performance in each comparison test by picking a Best Performance winner. This award goes to the product that outshines the competition in our performance benchmarks. The Best Value award, on the other hand, is awarded to the product that we feel has the best combination of price and performance. Consider this your yardstick if you are looking for more value for your money.

STAR RATINGS	
★★★★★	**Excellent:** a brilliant combination of price, performance and features, far beyond expectations
★★★★	**Good:** a good buy, better than most products in its category
★★★	**Average:** reasonably competent but nothing spectacular about the product
★★	**Mediocre:** does not live up to expectations, needs improvement in many areas
★	**Poor:** contains serious drawbacks and needs improvement before it can be used for the target application

In Test this Month

For this months comparison test we have an assortment of laptops. We got to lay our hands on a selected group of 10 laptops, from the classy Compaqs to the sleek Sharp!



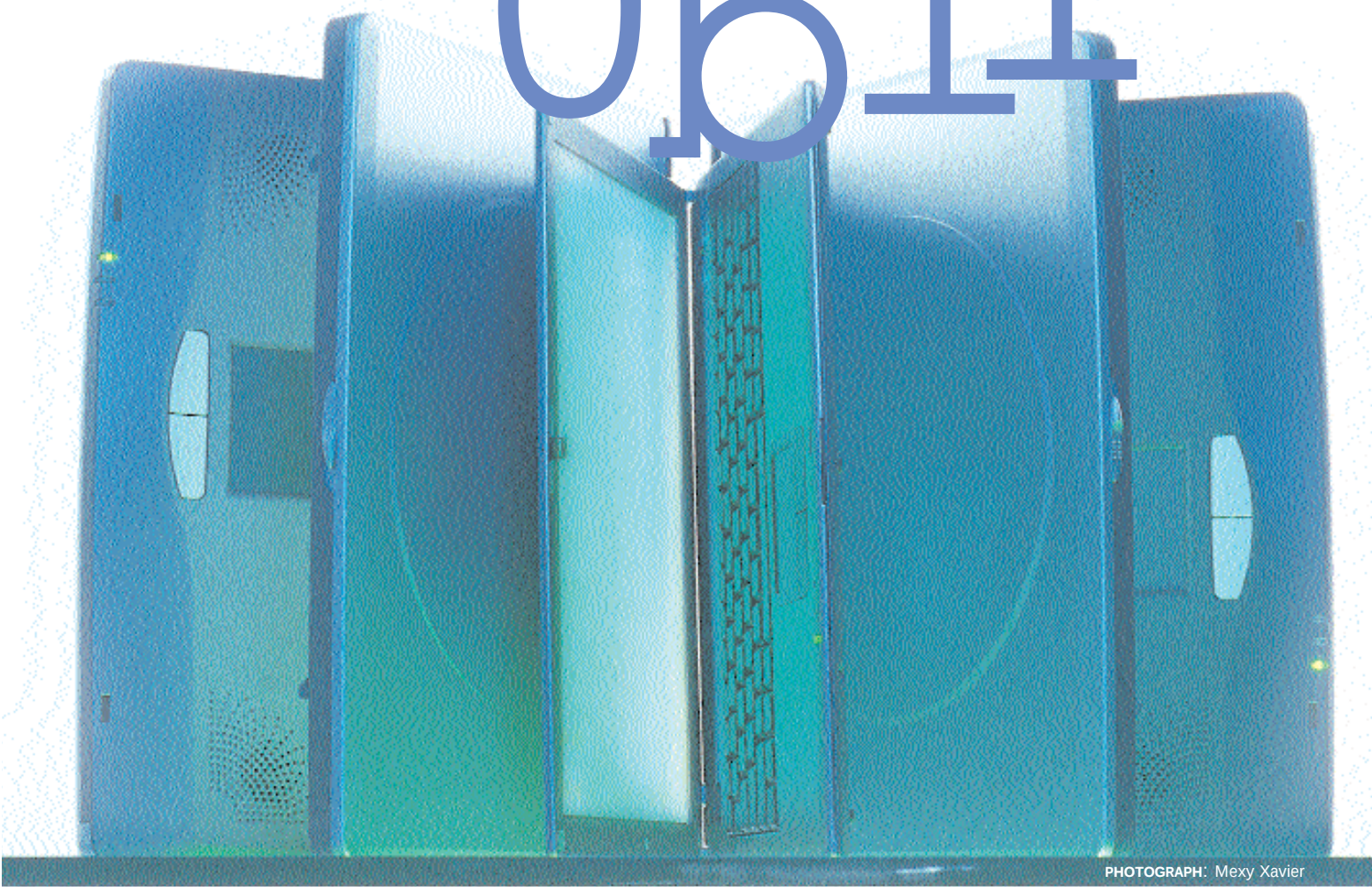
As a matter of fact, the Sharp Muramasu PC UM10 literally had the entire Test Centre and the rest of the team drooling. A complete opposite was the brute force solution from ACi—the ACi Xtreme was truly a bully of a laptop with its rather oversized LCD screen.

In the software comparison, we scrounged the Internet for great freeware—the best that's available. Some were old favourites while for other categories we were pleasantly surprised to find some new alternatives that offered great functionality. The freeware revolution clearly continues to thrive.

Mindware

★ Featured in the Test Drive section of the Mindware CD are 30 great freeware. Go ahead. Try them out for yourself.

UPWARDLY Obil



PHOTOGRAPH: Mexy Xavier

Our reviewers roll up their sleeves and set to review the sleekest laptops and notebooks in the market. The criteria is very simple: both performance and looks

Gourmet dinners, beluga caviar, attractive flight attendants, movies playing at 15,000 feet altitude, a jetsetting lifestyle. If you think this is the kind of person who uses laptops, wake up! It's as easy churning out corporate presentations as it is easy playing crispy-clear DVDs or battling a war-crazed alien race from conquering planet earth, and all of it an affordable price. It's now possible to have that chic notebook, and enter some serious entertainment (and work) phase. Desktops are passé—step up that corporate ladder and take a check on your dated computer.

If you are confused about which features to choose, don't worry. We have the features all sorted out. Also, you shouldn't be fretting over how to get software—all major applications are bundled free and the service and support network is better than what any desktop user can expect.

So if you think it's time to decide which laptop will work the best for you, depending on your needs and personality, then you'll find the products lined up here seriously fast and stylish. They'll match your lifestyle provided you match theirs—anything between Rs 70,000 to Rs 1,50,000.

Core configuration

There is a minimum level of computing power that is required for most modern applications. If you plan to use the laptop extensively for office productivity-related applications, then you should at least look at a machine that offers you 500 MHz or more computing power. This along with a decent amount of RAM (128 MB) will get you through most applications without a hiccup. The hiccupping starts when you have a poorly configured system (read chipset and processor combination) internally which you will simply have to live with, considering the fact that with laptops you don't have the option of changing motherboard chipsets.

Models from Compaq and ACI were decently configured in terms of pure processing power. Both the Compaq Presario 1722 and the Compaq Presario 1725 came with 1 GHz+ Pentium III processors. In fact, the Compaq Presario 1725 came with the top-of-the-line Tualatin Pentium III-M 1.13 GHz processor. ACI, on the other hand, has all its models configured with at least 1 GHz and above class processors. The ACI Profile 2860 comes fitted with a Celeron 1 GHz and the Profile 3270 comes with a Pentium III-M 1.26 GHz (Tualatin) processor. Also, models from ACI featured GHz class processors, the ACI Profile 3270, and the ACI Xtreme came configured with 1.26 and 1.2 GHz respectively. The ACI Profile 2860 came configured with a Celeron 1 GHz processor.

All the notebooks that we received had decent computing power and did not behave sluggishly, even though some of them had Windows XP Home edition as their standard operating system.

Let's move on to the next critical component in a laptop: RAM. SODIMM (small outline dual inline memory module), as it is called with 144 pin and 3.3 V (instead of regular 168 pin SDRAM and 184 pin DDR-SDRAM), voltage rating is what is used in laptops. RAM is usually placed under the keyboard so that it can be easily removed when upgrading. Sometimes the RAM is placed near the bottom, like the Sony Viao, for easy access. To save space and reduce width of the laptop, the RAM is fixed flat on the board and not vertically as in a desktop.

All the laptops except for the Compaq Armada came configured with at least 128 MB RAM, and some even came configured with 256 MB RAM. Of course, this fact showed in the scores. Two out of the three models from ACI came with 256 MB RAM, and so did the Compaq Presario 1725. The rest were quite stuck in the ordinary computing territory and came configured with 128 MB of RAM.

Mobile CPUs

The CPU is without doubt the most critical component. Its integration into the laptop has major implications as it draws a lot of power, drains resources, and outputs considerable heat. Since space is restricted, adequate cooling while maintaining low noise levels is important. The 'mobile' processor is much smaller (Micro FCPGA2 and FCBGA2 Packaging. These special miniature packages enable thinnest and the lightest notebooks) and has some very nifty instructions built in for conserving power and reducing heat output. For example, the Pentium III uses Enhanced Intel SpeedStep Technology wherein the processor automatically switches between two core frequencies based on CPU demand, optimising battery life and application performance. Another great feature is 'QuickStart' which simply extends battery life by reducing power during pauses in user activity, such as between keystrokes and minor idle states. Deeper Sleep alert state is a dynamic power management mode which is enabled during less than a millisecond of inactivity by the user, such as between keystrokes, thus delivering longer battery life.

The last of the critical component in a laptop is the hard drive. The hard drives of laptops are smaller than that of regular desktops—they are of 2.5-inch rather

VIDEO CARDS FOR LAPTOPS

ATi Radeon Mobility Comes out Trumps!

Just the thought of seeing primitive rendering and lacklustre performance puts off most users when it comes to 3D graphics on a laptop.

The primary reason for dated graphics on laptops was the fact that most laptop manufacturers used chipset solutions that provided no AGP functionality. If included, it would be integrated in the chipset so as to consume less space and generate little heat so that there would be no need for extra cooling. So if you planned to show that amazing rendering in 3D Studio Max on a laptop, you simply couldn't.

Integrated chipset-based shared memory architecture-dependent graphics cards are still the norm for laptops. But the trend is slowly and steadily moving towards better and faster solutions with top 3D graphics chip manufacturing companies showing an increasing interest in this area.

ATi, the world's largest provider of OEM graphics chips for laptops, has released the ATi Radeon Mobility, a chip which came integrated in the ACi Xtreme laptop that we received for testing. The results were simply astounding. Not only was the quality of 2D top notch but the Xtreme had an uncanny knack of running *Quake III* at a whopping speed of 105 fps in normal mode.

The Mobility packs in a single pipeline architecture with the ability to render three texture units in one pass. The ACi Xtreme featured 32 MB of dedicated graphics DDR memory to boot.

So what's the hit, you ask? Well little, if any. The Radeon Mobility has some really cool features to ensure that battery power consumption still remains at low levels by using what ATi calls the 'Voltage/Frequency Modulation' feature. This feature basically allows the chip to run much slower and hence consume less power when the laptop is being used for mundane desktop tasks. But the minute you crank up a 3D application, the Radeon Mobility kicks in, unleashing all of the power that even some desktop PCs don't have.

Features like alpha sub-picture blending and adaptive de-interlacing provide picture-enhancing quality, and other features like iDCT and motion compensation augment performance. You can now finally run cool graphics and games, and render that high polygon count object in 3D Studio Max right on your laptop!

Digit Test Process

Laptops have to be functionally competent besides being really small, portable and easy to use. To evaluate such purposeful devices purely on the basis of performance seems unfair—we can't be blind to the fact that laptops are severely handicapped in terms of space and power. Hence, we have accorded more weightage to features as well as the ability to add more peripherals. When choosing a laptop, you should first determine the features that are important to you.

1. Performance: We ran office productivity-related benchmarks like Business Winstone 2001 and Content Creation Winstone 2001, besides the BatteryMark 4.01 which tests the battery output. To test for OpenGL and Direct3D compliance, we ran *Quake III Arena* and 3DMARK 2000 to determine whether the laptop was capable of decent graphical output or not (remember no benchmarks were run).

2. Core configuration: The core configuration should be well matched with the critical components (CPU, Chipset, RAM and the drive space offered). We set a minimum of 500 MHz of processing power, 64 MB of RAM, and 10 GB of hard drive space as the necessary requirements. This is the least one can expect for running the latest Operating Systems and applications.

3. I/O functionality expandability: Without this the notebook would become an isolated computing device with no ability to communicate with others. These come in the form of serial, parallel, USB, and PCMCIA ports. Our list of minimum required ports is: one Type-II or Type-I PCMCIA slot, one serial port, one parallel port, one PS/2 port, one Mic In / One audio output, two USB ports, one RJ-11 modem jack, one RJ-45 LAN jack, one S-Video out, one 4 Mbps IrDA Comm port.



"Convenience, mobility and stamina in terms of battery life takes precedence over performance"

Hatim Kantawalla,
Deputy Head, Test Centre, Jasubhai Digital Media

4. Package contents and accessories: Here we noted the software bundle and package contents of the notebook.

5. Build quality and ergonomics: This is the most subjective part of the test; hence opinions from three individuals were taken. Extra points were awarded for exceptional looks and design.

6. Software bundling: We focused on the operating system here: higher marks were awarded to Notebooks that bundled the Windows XP home edition. Also, more marks were awarded to notebooks that offered office suites, management tools, and some sort of system recovery software.

7. Display: This was checked for the maximum possible resolution, screen size, and the number of inactive pixels, if any.

8. Extra goodies: Extra points were awarded to laptops bundling a lot of extras—DVD, CD-RW, Combo, Superdrive, extra external storage devices, MP3 player capabilities, USB 2.0 functionality, and so on.

than the regular 3.5-inch form factor. This also adversely affects the maximum capacity available: to have a 40 GB or higher drive in a laptop is a really tough achievement. The power requirements have also been modified—this makes the drives run slower, averaging a seek time of 13 ms, and only 4,200 or so rpm.

All the notebooks came with at least 20 GB drive space. Compaq Presario 1725 stood tall by providing a whopping 40 GB drive. The ACI Profile 3270 and the ACI Xtreme were not too far behind with 30 GB drives.



Performance

What really matters in day-to-day tasks is the core configuration. Let's take a look at the tests.

The scores for Business Winstone 2001 are important: it is a system-level, application-based benchmark that measures overall performance when running a suite of office productivity applications. Here we sought a range: scores of 20 and below were considered average, between 20 to 30 were adjudged good, and 30 and above were clearly excellent.

Anything that logs a score near 20 should be considered a notebook that can handle most office applications with ease; it wouldn't have problems running the latest OSes. Here we found most notebooks cleared the 20 mark without any difficulty. The Compaq Presario 1725 scored an amazing 53.4.

Next, we ran Content Creation Winstone 2001. Here too you can apply the same rule for scores as Business Winstone 2001. Content Creation is a more multimedia-heavy benchmark and the scores are generally expected to be low. Despite this, we discovered that most of the notebooks could clear the 20 figure with relative ease. The Presario 1725 was no surprise, as it again scored high (51.3). The ACI Profile 3270 and the ACI Xtreme faired well too, scoring 37.4 and 36 respectively. All said and done, the Compaq Presario 1725 showed its pedigree by truly stamping its authority all through the benchmarks. It is a notebook power users would love to possess (and display).

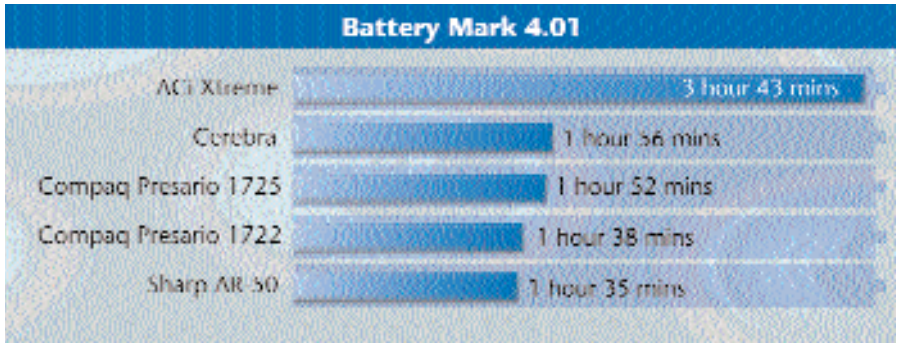
While considering a new laptop, you should be aware of enjoying a computing experience with better display screens and graphics cards. All major laptop manufacturers are integrating formidable graphics cards with full OpenGL and Direct3D functionality, coupled with hardware-based DVD decoding capabilities.

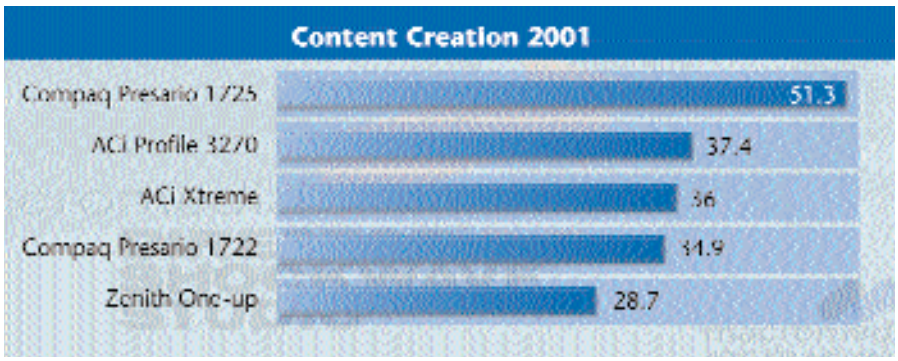
To test the ability of the graphics card to run OpenGL and Direct 3D games and applications, we ran 3DMARK 2000 and *Quake III: Arena* as part of a passive test (passive because the test was only to judge whether the notebook was able to run the application). Surprisingly, we found that most notebooks could actually run *Quake III*—and some could run it pretty well! As a matter of fact, the ACI Xtreme came out as the top dog: it blazed away in *Quake III*

making a mockery of some poorly powered desktops. This model comes built with an ATI M6-P Integrated AGP 4X graphics card which has a fully DirectX 8 compliant graphics engine, coupled with 32 MB of ultra fast DDR memory.

Direct3D functionality was pretty decent too, and some notebooks like the Compaq Presario 1725 even went on to complete the 3DMARK 2000 benchmark.

Just goes to show that if you are in the mood for that odd game or two while traveling at 35,000 feet altitude, you won't be disappointed.



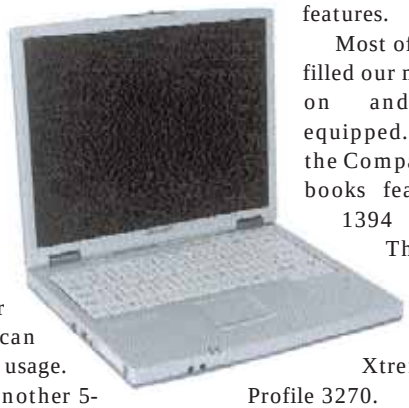


Battery power

The ability to put your laptop on in a remote location with no electrical source is true computing freedom. NiCad (Nickle Cadmium) and NiMH (Nickle Metal-Hydride) were the more popular types of batteries used in laptops. These have now been replaced by the ever-popular Li-Ion (Lithium-Ion) batteries, which provide a longer life and cannot be overcharged. This makes it ideal for laptops. Also, due to higher density, these batteries are smaller and lighter than NiMH batteries.

All the laptops came fitted with lithium ion batteries. To drain the notebook's battery, we ran BatteryMark 4.01, which uses the tests of Business Winstone 2001. This benchmark is scripted in such a way that it runs applications which drain a notebook's battery—it mimics real-time usage.

We warmed up the notebook by running it for an hour; the battery was then left to charge overnight. All power management software was disabled and the notebook was then disconnected from the mains. Expect an extra 10-20 per cent battery performance if you have power management enabled.



Almost all the notebooks had a battery life of about one-and-a-half hours under this test. Except for one, the ACI Xtreme truly took battery power to an 'extreme'. This notebook comes specially fitted with a 5-hour rated battery and it ran admirably in our tests for an amazing 3 hours 43 minutes. Using power management, this notebook can easily cross 4 hours of nonstop usage. The ACi Xtreme comes with another 5-hour battery as an extra—this gives you nonstop usage of over 8 hours!

Another notable mention was the Cerebra notebook, which came close to crossing the 2-hour barrier in non-stop usage by scoring 1 hour 56 minutes. The Compaq Presario 1725 scored a respectable 1 hour 52 minutes.

I/O functionality, features and expandability

Laptops also come with additional docking connections which allow users to connect an extra monitor, keyboard, mouse, printer, etc to the laptop and use it as a regular desktop PC. Most computers have the infrared port so that other infrared devices like PDA can be used with the laptop.

The I/O functionality of the laptops was tested against a minimum requirement of certain ports and features.

Most of the laptops fulfilled our minimum criterion and were well equipped. Notably, both the Compaq Presario notebooks featured an IEEE 1394 FireWire port. This port also came standard with the Sharp AR-50, ACi Xtreme and the ACi Profile 3270.

The ACi Xtreme, Zenith One up, Sharp AR-50 and the Compaq Armada E-500 also came with two PCMCIA Type II slots. The rest came with only one.

In terms of raw features the Compaq Presario 1725 towered over others, featuring JBL Pro Audio with Bass reflex and Dolby Digital certified sound that was hard to beat. The musical output of this notebook was truly inspiring, a far cry from the tiny speakers that came with the remaining models. Nevertheless, the ACi Xtreme wasn't far behind: it featured one Sony standard Memory Stick along with one Panasonic SD Memory card, support for optional 802.11b Wireless LAN, and a 3D enhanced sound system using a Sound-Blaster PRO interface. The ACi Xtreme that we received had a DVD-ROM drive attached. The Compaq Presario 1725, on the other hand, came fitted with a hot swappable 4x4x24x6xCD-RW-DVD combo drive. The Sharp AR-50 too had an 8x/4x/24x CD-Writer.

Quality and display size

The thin flat LCD (Liquid Crystal Diode) display on a laptop or notebook is the most delicate of all components, and also a major chunk of the cost component of a notebook. While the performance wasn't comparable to CRTs earlier on, the latest developments in size and transistor response times have made displays pretty comparable. Bad transistors and pixels are a part and parcel of the entire laptop experience. Though this problem has been fixed to a certain degree with more expensive notebooks, you still need to be

careful while using them. However, you will always know a good LCD screen when you see one. The screen size available today is as high as 15.1-inch and the resolution supported due to a good integrated graphics sub-system can go as high as 1600x1200 wide screen.

Since looks matter more, the competition in this space is fiercer. Every inch is important, and resolutions and sizes of screens have become critical factors in buying decisions.

In terms of pure size, there was no question as to who the winner was: The ACi Xtreme. It showed how much 'extreme' can stretch with a uniquely fitted 15.1-inch SXGA TFT screen supporting a maximum resolution of 1400x1050.

The rest of the notebooks were using standard 14.1 Active Matrix XGA TFT screens with support for a resolution of 1400x1050 and 16 million colors. The build quality of the Compaq and the ACi screens was top-notch. Sharp screens had impressive clarity, especially the Muramasu PC UM10, which had a 12.1-inch TFT screen with excellent sharpness and colour rendition. None of the laptops had any artifacting on the screens or, more notably, bad pixels.

The responsiveness of the TFT screens was also checked for. This was done while running *Quake III*. There was only a slight motion blur on most screens when there was excessive movement in the game. This made watching DVDs or VCDs an enjoyable experience. Overall, the Sharp AR-50 was the winner in terms of screen clarity and sharpness.



Accessories and software bundle

Most of the notebooks came preinstalled with the top-of-the-line Windows XP Home edition as the standard operating system. Sharp's notebooks came bundled with Windows Me while the Zenith 21A and the Compaq Armada E-500 came with the dated Windows 98 SE as the OS.

The Presario series came bundled with the most impressive software—Microsoft Windows XP Home Edition, coupled with Microsoft Works 6, Win DVD, and separate CDs of Money 2001, Norton AntiVirus 2002, Studio DV as well as an impressive CD documentation explaining the entire package in detail. One more thing, the software bundle came along with a special OS crash recovery CD to minimise downtimes.

Sharp AR-50 had software bundled with Adaptec Easy CD Creator, MGI PhotoSuite III SE, TCI Fax Talk, Voquette Media Manager, and McAfee VirusScan.

The Zenith 21A was the barest minimum in these terms. It just had a Windows 98 SE licensed CD and a manual.

Build quality, ergonomics and weight

This is probably the most subjective of all the tests. But a few things here stand out immediately. For example, there was no doubting the supreme build quality of the Presario notebooks. The clamshells of these notebooks were truly professional and aesthetic. From the way you open the notebook to the manner in which the keyboard is laid out—everything about the Presario oozes confidence and flamboyant design. It weighs 2.36 kg, is easy to work with, possesses a superior key layout, and its beveled and softly curved palm rests easy on the wrist. Working with the Presario is made pleasurable with a four-way Internet scroll, instant Internet, and audio and e-mail launch keys. It has a special digital one-touch control for volume control and a full size keyboard with separate cursor control keys. The speakers too are intelligently placed on the front side, unlike some other notebooks where the palm itself rests on the speaker and hinders the audio output.

The Sharp series has focused more on

Laptop Maintenance and Care

Like any other device, laptops too need a fair share of care and maintenance, sometimes a little more than desktop PCs.

Try to keep the computer as clean as possible. Avoid transporting or using it in dusty environments. Use the carrying bag provided or some other clean container when you transport the laptop.

Make sure the computer is turned off before unplugging it. When you disconnect cords, remember to pull them by the plugs and not by the cords themselves. This will prevent damage to the cords, plugs, ports, and jacks.

Use a high-quality electrical surge protector, if possible, when the AC adapter powers your computer. It is also a good idea to unplug your computer when it is not in use.

How do I clean the display?

Use a soft damp cloth, clean the surface of the screen gently. If there are stubborn dirt stains, do not put more pressure. Instead, use ISO Propyl alcohol to clean the stain. Do not use gritty, rough-textured cloth or paper to clean the screen as this can leave permanent scratches.

How do I dust the keyboard?

Blow hard into the keyboard and then gently turn the laptop upside down. This should get rid of all loose dust and grit that may have accumulated between the keyboard keys. Alternatively, you could also use a vacuum cleaner to blow out any dirt that might deposited on the keyboard.

What about the battery?

A common problem faced by most laptop users is the progressive deterioration in reliability after the first year of service. This loss occurs gradually without the user knowing. Even though the battery may show as fully charged, its capacity to hold that charge diminishes to the extent that it may sometimes hold less than half its original capacity.

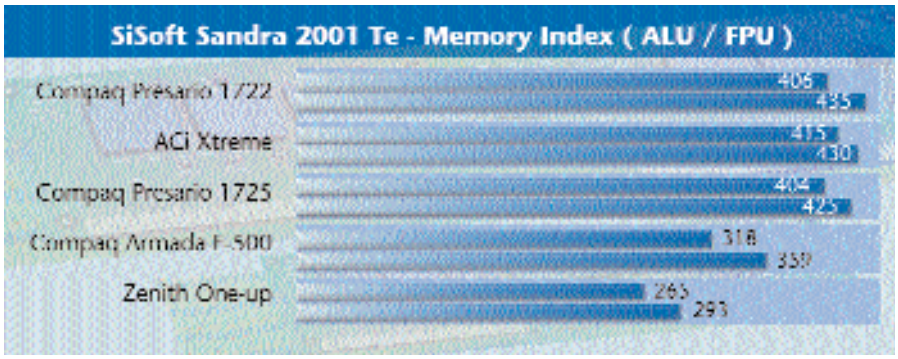
Batteries work best if they are completely discharged before recharging, and that goes for all types (though Lithium-Ion needs this less frequently). When you start using your battery for the first time, drain and recharge it entirely at least three or four times.

the simplicity of design. The PC-UM10 is an ultra-light notebook weighing less than 1.3 kg, and so is the lightweight Muramasu. With a thickness of about 16 mm, there is almost no competition to this notebook. Couple this with the fact that it features a really cool magnesium clamshell casing and a brilliant keyboard. Then add to the fact that Sharp makes some excellent build quality screens. Put all these points together and this notebook becomes a statement by itself.

The ACi Xtreme—though the name doesn't tell you that—is built like a rock. It is big and robust with a matching colour combination and weighs all of 3.6 kg. It actually makes a desktop look skinny!

The bottom line

When it comes to performance in a complete package, the Compaq Presario 1725 is the thing. Configured like a desktop and built like a portable, it lives up to all the expectations that you would have from a neat little notebook. The only gripe we had was that it lacked a decent graphics card, but then that's a minor gripe. Worthy mentions here are no doubt the ACi Xtreme and the Sharp AR-50. The ACi Xtreme loses out because of its relative lack of finesse and rather bulky design.



If you want a laptop without spending too much, then the Zenith 21A is your best bet. It wins the Digit Best Value award hands down for very simple reasons: a decent looking laptop for Rs 75,000 that bundles almost every possible external peripheral that you would desire. The Zenith 21A really takes the cake by bundling a set-top TV tuner module with a remote and cigarette lighter battery charger!

The Winners!

Compaq Presario 1722

This is a slickly designed machines with a vibrant colour combination of silver and dark blue. Configured with a P-III-M 1GHz processor, 128 MB RAM and a 14.1-inch XGA Active Matrix Display (as well as an ATI Mobility Radeon 8MB DDR graphics card), this is one of the fastest notebooks. Highlighted here are the JBL Pro speakers that reproduce crystal clear sound with crisp notes and deep, bassy lows. Storage is taken care of by a 30 GB hard disk as well as an 8x DVD swappable with floppy drive. The Presario also has a plethora of bundled applications including Norton AntiVirus 2002, MS Money 2001 Standard, Pinnacle Studio version 7SE, as well as 30 hours of bundled Internet account from Satyam.



In the tests, the Presario displayed fairly good results in both office productivity and gaming. In Content Creation 2001, it generated an index of 34.9 and 36.7 in Business Winstone 2001. In short, this is a machine which works excellently both as a desktop replacement as well as a notebook.

Rating: A-

Verdict: ***The Compaq 1722 oozes class in build quality and performance.***

ACi Xtreme

This notebook features an amazing dual battery pack bundle that theoretically gives users 10 hours of battery power ➜

The New iBook

Radical designs and innovation. That's what everybody expects from Apple. Last year Apple came out with the PowerBook G4—its inventiveness ranging from the simple magnetic hinge holding the screen in place to the one-touch battery status indicator and the glowing light behind the screen. Now, when you look at the iBook, it automatically becomes clear how far the designers have come from the G4. The clear white shell looks nothing less than stunning, the finishing inside is appeal redefined, and the design reiterates Apple's position as the industry leader in design. Even though the iBook is slightly bulkier and slower than the G4, it is still way ahead of any other laptop(s) we received in this test. The 1024x768 TFT display is bright and responsive (like the G4), there's a G3 600 MHz processor inside which is twice as powerful as the last iBook, you have all connectors you would ever require, and it runs 5 hours on a full charge. The high-end series comes with a DVD CD-RW combo drive, 256 MB of RAM, built-in wireless antenna, and…well, so much more that you'll have to see it all yourself. Not to forget that it comes preloaded with OS X 10.1. The iBook. Intelligently beautiful.



iBook vs PowerBook G4

Specs	iBook	PowerBook G4
CPU	G3 600 MHz	G4 550 MHz
RAM	256 MB	256 MB
Graphics	ATI Rage Mobility 8 MB	ATI Radeon Mobility 16 MB
HDD	30 GB	30 GB
Optical	CD-RW DVD Combo	Slot Loading DVD
Screen	12.1-inch Active Matrix TFT, 1024x768	15.2-inch Active Matrix TFT, 1152x768

SCORE BOARD

Laptops at Glance

Laptop Models	ACI Profile 2860	ACI Profile 3270	ACI XTREME	CEREBRA	COMPAQ ARMADA	COMPAQ PRESARIO 1722	COMPAQ PRESARIO 1725	SHARP AR-50	SHARP MURA-MASU UM10	ZENITH ONE UP
Specifications	Celeron 1GHz, 128 MB RAM, 13.3 TFT, 4X AGP 64 MB, 20 GB HDD, 24X CD-ROM, 1.44 MB FDD	P-III 1.26 GHz, 256 MB RAM, 14.1 TFT, AGP 4 X 64 MB, 8x DVD-ROM, 30 GB HDD	P-III 1.2 GHz, 256 MB RAM, 15.1TFT, ATI M6-P Integrated AGP 4X, 32 MB DDR, 8X DVD-ROM, 30 GD HDD	P-III 850 MHz(100 MHz FSB),256 MB RAM,14.1XGA,4 X AGP 8MB (shared), 24X CD-ROM, 20 GB HDD	P-III 800 Mhz, 64 MB RAM, 14.1 XGA, ATI RAGE Mobility 4X AGP 8 MB , 8XDVD,20 GB HDD	P-III 1 GHz, 128 MB RAM, 14.1 XGA, ATI Mobiltiy Radeon 8 MB RAM, 8X DVD-ROM, 30 GB HDD	P-III 1.13GHz(133 MHz FSB), 256 MB RAM, RAGE Mobility 8 MB RAM, 4x4x24x6xCDR W-DVD Combo Drive, 40 GB HDD	P-III 850 MHz(100 MHz FSB), 128 MB RAM, 14.1 XGA, ATI RAGE Mobili-ty 4X AGPwith 8 MB RAM, CD-WRITER24/8/4, Integrated 10/100 Accton EN2242, One IEEE 1394 Firewire connector	P-III 600 MHz(100 MHz FSB),128 MB RAM, 12.1 VGA (1024X768), ATI Rage Mobility 8 MB 4X AGP, ExternalUSB CD-ROM, 20 GB HDD	Pentium III 850 MHz(100 MHz FSB), 128 MB RAM, 14.1 XGA, 8 MB 4X AGP, CD Writer(8/4/24), 20 GB HDD
Features	56K Modem, Integrated SIS 900 Ethernet	56 KBPS Modem, Inte-grated 10/100 Ethernet card, One Firewire connector	56 K Modem, Integrated 10/100 Ethernet card, Realtek Internal wireless NIC, One Firewire connector	56KBPS Modem, Integrated 10/100 Ethernet card	56Kbps Modem, Integrated 10/100 Network Adapter	Conexant v92 Mini PCI Modem, Intel Pro/100 ve Inte-grated Ethernet Card, One Firewire connector	Conexant v92 Mini PCI Modem, Intel Pro/100 ve Inte-grated, One Firewire connector	Integrated 10/100 Accton EN2242, One Firewire connector	56Kbps Modem, Integrated 10/100 Network Adapter	56Kbps Modem, Integrated 10/100 Network Adapter
Dimensions (cm)	30.5 x 25.1 x 3.7	30.5 x 25.1 x 3.7	31.2 x 27.3 x 3.75	30.5 x 25.1 x 3.7	12 x 10 x 1.6	32.5 x 26.3 x 3.28	32.5 x 26.3 x 3.28	30.9 x 25.2 x 3.33	28.2 x 23.2 x 1.66	31.0 x 25.6 x 35.0
Weight	2.9 kg	2.9 kg	3.5 kg	2.7 kg	2.6 kg	2.36 kg	2.36 kg	2.6 kg	1.31 kg	2.9 kg
Package contents	Windows XP Home Edition, carry case	Windows XP with 12 month RTB	Carry case with Windows XP Home Edtion	MS Windows 98 & Norton Anti Virus software	Win98 Second Edition with 1 year warranty.	Windows XP Home Edition, Win DVD, Money 2001, Norton AV 2002, Studio DV, Recovery CD	Windows XP Home edition, Win DVD, Money 2001, Norton AV 2001, Studio DV, Recovery CD	Windows ME, Adaptec Easy CD Creator, MGI PhotoSuite III SE, TCI Fax Talk, Voquette Media Manager, McAfee VirusScan	Windows Me	Windows 98 SE Cigarette lighter adapter for Laptop External TV tuner with remote
Warranty	1 year carry-in	1 year carry-in	1 year carry-in	1 year	1 year	1 year	1 year	1 year	1 year	1 year compre-hensive warranty
Battery Mark 4.0.1	1 hr 16 min	1 hr 16 min	3 hr 43 min	1 hr 56 min	1 hr 26 min	1 hr 38 min	1 hr 52 min	1 hr 35 min	1 hr 32 min	1 hr 35 min
Content Creation 2001 (Index)	20.7	37.4	36	25.3	17.5	34.9	51.3	27.9	19.4	28.7
Business Win-stone 2001 (Index)	20.6	33.5	32.7	Failed	21.6	36.7	53.4	28	13.4	29.5
Memory **ALU (MBPS)**	239	291	415	201	318	406	404	261	254	265
FPU (MBPS)	281	297	430	230	359	435	425	293	186	293
HDD Index										
Sequential Read (MBPS)	4	5	3.59	4	8	18	10	18	4	19
Random Read (MBPS)	2.5	2.65	2.33	2.45	3.38	4	3.12	3.96	2.45	4
Sequential Write(MBPS)	5	5	3.81	5	8	13	10	17	4.08	16
Random Write (MBPS)	4	4	3.78	4	5	3.95	2.97	3.76	3.95	5
Avg. Access time (ms)	9	10	9	10	11	14	14	12	11	12
Quake III Arena	Smooth gam-ing possible in normal mode	Average per-formance in normal mode	Excellent for gaming enthusi-asts	Below average performance	Did not run (No support for OpenGL)	Quite playable, but pros wont prefer	Packs a punch with above aver-age frame rates	Quite playable with reasonable frame rates	Did not run (No OpenGL sup-port)	Barely playable
Price	Rs 69,990	Rs 99,990	Rs 1,29,990	Rs 75,000	Rs 1,29,000	Rs 1,08,669	Rs 1,30,405	Rs 1,30,000	Rs 1,35,000	Rs 75,000
Contact	ACi India Pvt. Ltd.	ACi India Pvt. Ltd.	ACi India Pvt. Ltd.	Cerebra Com-puters	AVI Electronics	AVI Electronics	AVI Electronics	Sharp Business Systems India Ltd	Sharp Business Systems India Ltd	Zenith Computers Ltd
Phone	022-2814359	022-2814359	022-2814359	022-8263305	022-6465522	022-6465522	022-6465522	022-2884412	022-2884412	022-8377300
Fax	022-2814360	022-2814360	022-2814360	022-8263306	022-6460347	022-6460347	022-6460347	022-2325667	022-2325667	022-8366030
E-mail	sales@aciindia .com	sales@aciindia. com	sales@aciindia. com	cerebra@bom7. vsnl.net.in	aviteam@vsnl. com	aviteam@vsnl. com	aviteam@vsnl. com	it-shrp@ltbkh. ltindia.com	it-shrp@ltbkh. ltindia.com	mumbai@zenith-india.com
Ratings	B	B	B+	B+	C	A-	A+	B	B+	B

while on the move. However, this does not come across as uninterrupted, since there are two separate 5-hour rated batteries provided with the notebook. The test for a single battery charged to the maximum gave us a result of 3 hours and 43 minutes, which is excellent. Another great thing about this laptop is the 15.1 XGA Active Matrix screen with the ATi Mobility Radeon graphics card supporting a maximum resolution of 1400x1050. For those who enjoy an odd gaming session, this notebook is a proper delight with *Quake III* performing excellently at scores of 105 fps in normal settings.

Making a Choice

	General	Desktop replacement	Ultra-portable
You need	A lightweight model but don't want to sacrifice screen and keyboard size	Something that gives you all the functionality of your existing desktop PC	A bit more panache, an ultra-light notebook might hit the sweet spot
Look for	A model that has an extra bay that would hold a CD/DVD-ROM, floppy drive, add-on battery, or even a CD-RW drive. These will generally offer a 13/14-inch XGA display and weigh less than 3 kg	Something that weighs about 4 kg and has a 15-inch (1280x1024) display. Most peripherals are within the laptop's chassis itself. A graphics adapter with 16 MB or more VRAM and a DVD-ROM drive.	You need a notebook lighter than 2 kg and, therefore, will have to suffer cramped keyboard, smaller (lower) resolutions. You will have limited connectivity options
The models	Zenith 21A, Sharp AR-50	Compaq Presario 1725, ACi Xtreme	Sharp Muramasu PC UM10
Price range	Rs 75,000-1,00,000	Up to Rs 1,75,000	Rs 1,00,000-1,50,000

Configured with a P-III 1.2 GHz mobile processor, 256 MB RAM, 30 GB of hard disk space, 8x DVD and all the standard features and connectors, this laptop is a perfect desktop replacement besides tough a mobile workhorse. But with a weight of 3.5 kg, it is a little bulky. Another mentionable feature is the availability of a Sony memory stick slot



along with Panasonic SD Memory card, which can be very useful if you use a digital camera or MP3 player. As far as benchmarking goes, it generated an index of 36 in Content Creation 2001 and 32.7 in Business Winstone 2001. Overall, users looking for a feature-rich desktop replacement with very less mobility would prefer this.

Rating: B+
Verdict: ***Xtreme is a great desktop replacement in the truest sense.***

Zenith One Up- 21A

This brand came in armed with a band of goodies and freebies—an external USB TV Tuner with remote, Vehicle Power Adapter (for charging laptops while on the move in a vehicle), CD for relevant drivers, Windows 98SE and an Internet



starter pack with 25 hours of free surfing time. This laptop was configured with a P-III 850 MHz processor, 128 MB RAM, and a 20 GB hard disk. A floppy drive and an 8x CD-Writer make the notebook a perfect portable companion. It has a 14.1-inch XGA TFT display and the battery supports a lifespan of almost one-and-a-half hours (1:35 mts).

This laptop was fully configured and came pre-installed with Windows 98SE. At one point we noticed here was that the battery not getting fully charged. We spoke to Zenith and the laptop was replaced with a perfectly working battery within a short span of time (approx 2 hours). That's service, one might say!

In the tests, Content Creation generated an index of 28.7, which could be mentioned at quite par, as the average score for this configuration machine hovers around an index of 30. A decent machine, nevertheless, for its price.

Rating: B
Verdict: ***Packed to the hilt with any external peripheral you can dream of.***

Sharp Muramasa – PC UM10

This laptop from Sharp is one of the sleekest notebooks we've received, literally. It has a thickness of only 16 mm and sports a bright silver color. It sports a brushed aluminium casing and the design looks clean and elegant.

The floppy drive as well as the CD-ROM drive bundled along have a special USB interface and can be plugged into the laptop using just one USB port, so you would have to keep shuttling either of the drives.

Another noteworthy feature in this notebook is the high-resolution Active Matrix display which allows you to view the screen from an angle of 90 degrees. Bundled along are applications like Windows Me, MS Money, Internet Starter Kit, and so on. Configuration with a P-III



600 MHz processor, 128 MB RAM, and 20 GB Hard disk, this machine definitely cannot be pitted against P-III 1 GHz warriors, but with its stunning looks and stylish features, it comes out on top as far as portability goes.

Rating: B+
Verdict: ***Cute-looking laptop that comes with a crisp TFT.***

HATIM KANTAWALLA

30 BEST FREE SOFTWARE



Presenting 30 software that work as good as any commercial software and come at just the cost of a download

Have you just spent thousands of your hard earned rupees on a new computer? Well, brace yourself and get ready to fork out some more if you intend to do something useful with it. Equipping your computer with even the most basic set of applications can end up costing you a pretty packet. Need a word processor? How about trying out Microsoft Office at almost Rs 20,000 per user? That's big bucks in any language.

Fortunately, there are a lot of programmers out there who choose to offer software at no cost. And unlike what you may have been led to believe, not all freeware forces you to deal with annoyances such as irritating pop-ups, numerous bugs or limited features. No matter what kind of software you are searching for, there is likely to be a free alternative out there on the Internet that will fulfill your needs and lead to big savings. Since finding these free programs and applications can be a trifle difficult, the Digit Test Centre has scrounged the Internet and picked out the best of the lot. Just go ahead and try them out.

YATISH SUVARNA

The prices mentioned for the commercial software are approximate. The actual cost to users in India may vary.

ILLUSTRATION: Ram

HTML Editor

Serif WebPlus 1

Would you like to create a Web site of your own? WebPlus 1 makes it an absolute delight to create professional looking Web sites by providing wizards for almost every component you wish to add to your site. One nice feature it includes is the Layout Checker which analyses any problems such as overlapping objects and long download times, and prompts you to rectify the mistakes before you finally upload the Web site. The inclusion of animated GIF files with a huge library of images makes this software a pleasure to work with.



Rs 14,352



Size: *15.2 MB*
Web site: *www.serif.com/webplus1/index.asp*
Best Commercial Alternative: *Macromedia Dreamweaver 4*

Audio Encoder/Converter

Exact Audio Copy

This is an easy-to-use audio grabber. The software features jitter correction, detection of pre-track gaps and silence in pre-track gaps. It also includes a built-in Wav editor with the basic functions for editing audio. Another feature of the software is that it uses the Windows 95 and Windows NT ASPI Interface, which enables it to support both SCSI and ATAPI CD-ROM drives.



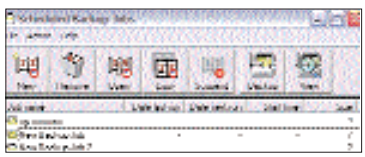
Size: *2.65 MB*
Web site: *www.exactaudio-copy.de*
Best Commercial Alternative: *AudioCatalyst*
You save: Rs 1,440



BACKUP TOOL

TaskZip

TaskZip is a system tool that automatically archives specified files and folders into a single zip file. It also allows you to backup files through the network across different PCs, or even on to a Zip or Jaz drive. TaskZip also supports scheduling of backup jobs. Another good feature in this software is that in case of data loss, you can highlight a backup job and with the click of a button, bring up your default Windows zip shell to restore the corrupt files.



Size: *1.54 MB*
Web site: *www.jupiter.drw.net*
Best Commercial Alternative: Active Backup Expert
You save: Rs 2,160

HARDWARE MONITORING TOOL

MBM 5.1

If you have a penchant for keeping track of your CPU and mainboard temperature, you will find this software handy. It displays your chassis fan speeds as well as RAM and CPU voltages; it also displays the effective CPU speed in a graphical interface. You just need to specify your personal settings—the software automatically sends an alarm notifying the user, thus helping him/her save the PC's vital components. You could alternately choose to start a program automatically in case your machine bypasses the maximum threshold limit predefined in this program.

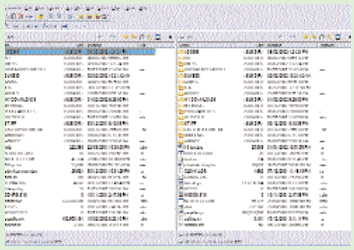


Size: *3.10 MB*
Web site: *http://mbm.livewiredev.com*
Best Commercial Alternative: *None*

FILE MANAGEMENT

Turbo Navigator v1.46

This is an advanced and highly customisable file manager for Windows. It works just like Windows Explorer but the difference is that it uses two file panels. The software features full drag-and-drop capability as well as the ability to wipe files from the disk so they cannot be undeleted. You can also preview movie or audio files through the built-in Media Player, which supports popular formats like WAV, MID, MP3, AVI, and MPEG. This eliminates the need for any separate application for playing these files. The software also sports a strong built-in encryption capability for quick file encryption.



Size: *712 KB*
Web site: *http://198.76.30.115/download/index.html*
Best Commercial Alternative: *FileQuest XP file manager*
You save: Rs 1,678

WEB SEARCH TOOL

WebFerret Version 4



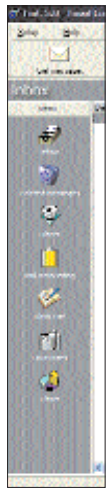
If you're looking for software that ferrets the exact information you need from the Web, then WebFerret it is! WebFerret uses search words that you can choose from four radio buttons: all keywords, any keyword, exact phrase, or boolean expression. It will query popular search engines and simultaneously display unlimited results. You can save your search history and filter pornography and foul language. Once the search is complete, the duplicate results are discarded and final results are displayed.

Size: *1.22 MB*
Web site: *www.ferretsoft.com*
Best Commercial Alternative: *Copernic 2001 Pro*
You save: Rs 3,838

ANTI-SPAM TOOL

EmC 5.0

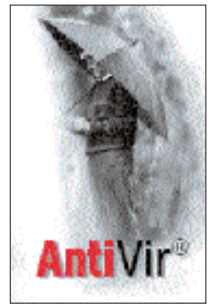
If you are tired of the junk crammed up in your mailbox, EmC (Email Control), an anti-spamming tool, will help you clean your inbox. It reduces the number of junk mail which arrive in your inbox using a combination of filters which can be easily customised by the user. The good thing about EmC is that it checks the mail while it is still on your ISP's server, and based on the filter criteria that you have specified, it processes the mail and optionally deletes all Spam or marks it for deletion.



Size: *2.82 MB*
Web site: *www.abreuretto.com/anti-spam/indexi.htm*
Best Commercial Alternative: *Mail Talk X*
You save: Rs 958

ANTI-VIRUS TOOL

Antivir Personal Edition



This anti-virus program provides effective protection against viruses and has an easy-to-use interface. It can detect and remove more than 50,000 viruses. It has an Internet update wizard which ensures that you are protected against new viruses also. The Virus Guard feature provides background scanning, thus your system is constantly monitored for viral activity.



Size: *6.19*
Web site: *www.free-av.com*
Best Commercial Alternative: *Panda Antivirus Titanium*
You save: Rs 1,198

MULTIMEDIA PLAYER

MicroDVD 1.2



This software allows you to play ripped DVD movies from CD or HDD. It also gives you the look-and-feel of a DVD by letting you rip the navigation menu of the DVD to video and still images and display it. Special feature DVDs containing extra movie files of background information can also be included and played by this player. This software also supports playing of multi-language movies and subtitles.

Size: *2 MB*
Web site: *www.tiasoft.de*
Best Commercial Alternative: *Cyberlink Power DVD xp4.0*
You save: Rs 2,398

PERSONAL FIREWALL

Sygate Personal Firewall 4.2.872

Sygate Personal Firewall is designed to protect your computer from hackers. The software renders your protected machine invisible to the outside world. It works in the background, constantly looking for intruders and Trojan horse applications. In case an intrusion attempt occurs, it detects it in real-time with built-in host- and application-based intrusion detection technology, while blocking it by default. The software immediately notifies you and adjusts your Internet connection with your approval, thus preventing further attacks.

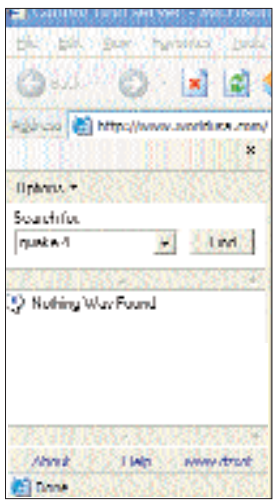


Size: *5.97 MB*
Web site: *www.webattack.com/get/sygatefw.shtml*
Best Commercial Alternative: *Zone Alarm Pro*
You save: Rs 1,918

BROWSER ADD-ON

Dzsoft Favourites Search

This is an Internet Explorer plug-in that adds a convenient explorer bar using which you can search in Favourites. This add-on is a great tool if you are an active Web surfer and have a lot of stuff in your Favourites folder.



Size: *424 KB*
Web site: *www.dzsoft.com/favseek.htm*
Best Commercial Alternative: *SurfSaver*
You save: Rs 1,438

E-MAIL NOTIFICATION TOOL

AvirMail 1.70

You are exposed to many virulent viruses while surfing the Net, especially while checking your e-mail. With AvirMail, the risk is reduced because it lets you read, print or even delete your mail while it's still on the server and before it is downloaded into your computer. The software also sports multi-user ability and password-protected startup. Remember, prevention is the best cure.



Size: *828 KB*
Web site: *www.avirmail.com*
Best Commercial Alternative: *The Bat Email Client*
You save: Rs 2,160

URL ORGANISER

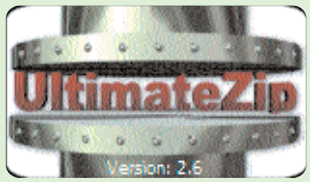
Bookmark Manager

Are you a frequent surfer? If yes, then this software will be of great help to you as it maintains all your bookmarks in a hierarchical tree format and also provides the facility to add comments to it. The software further extends its capabilities by offering you FTP support—you can easily transfer your bookmarks between your home and office computers.

Size: *440 KB*
Web site: *www.paneuropean.com/bm/index.htm*
Best Commercial Alternative: *Powermarks*
You save: Rs 1,438

ZIP TOOL

UltimateZip 2.6



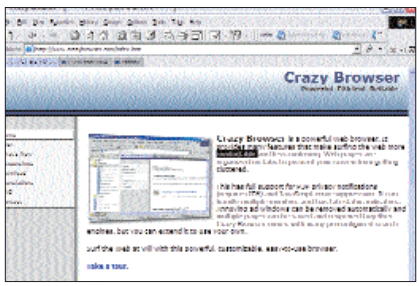
Home users are more concerned about their hard disk space now than they were earlier. This is where UltimateZip comes in handy—it provides functions such as compressing multiple Zip files at one go through the batch compressor. It also features a unique feature called filemask which allows one to hide files within the archive. For example, if you want to hide compressed software, simply type ***.exe*** in the filemask option and the rest of the files will automatically not be displayed. You can also automatically send the compressed files to your e-mail client.

Size: *3.5 MB*
Web site: *www.ultimatezip.com*
Best Commercial Alternative: *WinAce 2.11*
You save: Rs 1,392

WEB BROWSER

Crazy Browser

Love the speed of IE but wish that it had multiple tabbed windows? Well, this browser gives you the best of both worlds by using the IE engine to render Web pages and display them within its multi-tabbed interface. It includes support for P3P and has the ability to elimimate the annoying pop-up ads.



Size: *768 KB*
Web site: *www.crazybrowser.com*
Best Commercial Alternative: *Opera 6.01*
You save: Rs 1,872

1/2 pg Ver. Ad

INFORMATION MANAGER

Address Organizer

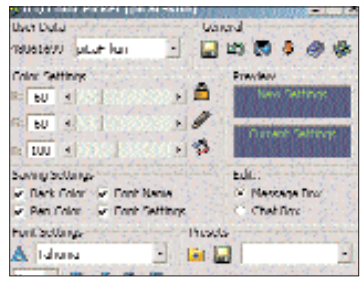
This software is a great tool for organising and managing contacts and addresses. It can be used for both SoHo as well as corporate users. Through the user-friendly interface, it's easy to arrange information in any desired way. The software also features filters and multilevel sort functions. The built-in HTML generator wizard lets you create great looking documents, Web pages, inventory reports, etc. Apart from browser and e-mail program integration, Address Organizer also supports direct entries from TWAIN-compliant devices and features support for popular image formats.

Size: *4.87 MB*
Web site: *www.primasoft.com/32org/32ado.htm*
Best Commercial Alternative: *Book Organizer Deluxe*
You save: Rs 3,120

CHAT ADD-ON

ICQ Color Picker

This application allows you to easily pick any RGB true colour for ICQ's Send Message Dialog's text box (ICQ itself lets you choose from only one of the 16 basic colours). It also has some nifty tools such as preset font customisation and editing chat settings. The application also provides command line support.



Size: *496 KB*
Web site: *http://pcsoftware.hypermart.net*
Best Commercial Alternative: *GabPager*
You save: Rs 478

GRAPHICS EDITOR

PhotoPlus 5

An ideal software for retouching photographs, adding special effects, and doing professional image editing work, PhotoPlus 5 makes working with multiple layers easy. This graphics editor has a thoughtful set of predefined selection tools and gamma correction capabilities. It features a simple interface does not scare novices away.



Rs 39,000

Size: *8.57 MB*
Web site: *www.serif.com/photoplus5/index.asp*
Best Commercial Alternative: *Adobe Photoshop 6.01*

LAN CHAT TOOL

Interchat 2.1.43

This utility allows one to chat with all the people who are hooked on the same network connected through LAN. One can create groups and this form of chatting is ideal for companies that have a large employee base hooked on LAN as no information is passed over the Internet.



Size: *732 KB*
Web site: *www.conware.org*
Best Commercial Alternative: *LanTalk XP*
You save: Rs 718

IMAGE VIEWER

ImageWalker 2.01

Managing a collection of images, which can range from pictures in a photo album to desktop wallpaper, is a common problem. ImageWalker is an image viewer-cum-manager that can help bring order to the chaos by letting you arrange images visually. Other notable features which separate it from its peers are the ability to catalogue and publish digital images. It also supports Web page creation, generates thumbnails, allows batch image conversion, and runs slide shows.

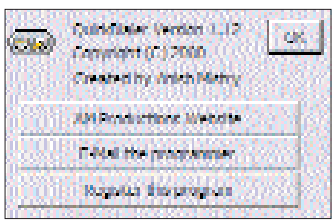


Size: *2.19 MB*
Web site: *www.imagewalker.com*
Best Commercial Alternative: *ACDSee 4*
You save: Rs 2,398

INTERNET DIALER

Quickdialer

If you do not want to use your Windows connection manager, you should try out this program. It has an extremely simple interface and requires lesser amount of details to be fed in, which makes it much easier to work with. On connecting to the Internet, it will automatically display the download and upload rate, thereby allowing you to know the exact status of your connection speed.



Size: *48 KB*
Web site: *http://am-productions.yi.org*
Best Commercial Alternative: *Advance Dialer*
You save: Rs 1,392

REMOTE COMPUTING

VNC v3.3.3r9 Remote Control

This software allows you to remotely control your PC over an office network or even over a dial-up connection. You can install the VNC server packages on your Windows machines, Linux, Solaris, or now even on OS X on the Mac, and access the GUI remotely over an Internet connection. Very simple to set up and amazingly effective even over an internet connection, VNC also provides http-based monitoring.

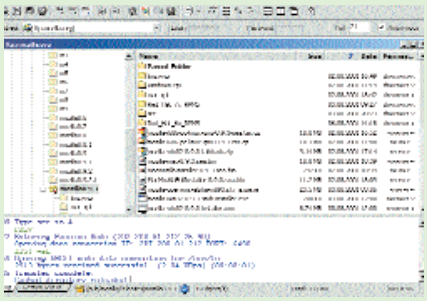
Rs 8,638

Size: *864 KB*
Web site: *www.uk.research.att.com/vnc/index.html*
Best Commercial Alternative: *PC Anywhere 10.0*

FTP CLIENT

SmartFTP 1.0.966

This FTP client features the drag-and-drop facility and is very user friendly. The software also supports multi-connections, transfer queue, scheduler and recursive downloads. The other features include firewall support, resume broken transfers and URL watcher, and support for Windows XP themes.



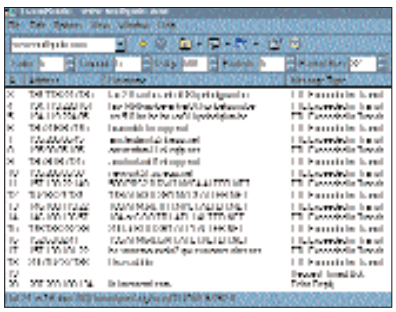
Size: *2.35 MB*
Web site: *www.smartftp.com*
Best Commercial Alternative: *Cute FTP 4.2*
You save: Rs 1,918

NETWORK TOOL SUITE

CyberKit 2.5 Network Utility

CyberKit is a 32-bit network utility. It combines Ping, TraceRoute, WhoIs, Finger, Quote of the Day, Name Server LookUp, Time Synchronizer, NetScanner, DBScanner, Check for New Mail and Keep Alive in one easy-to-use utility.

Size: *1.5 MB*
Web site: *http://www.cyberkit.net*
Best Commercial Alternative: *SolarWinds Professional Edition*
Rs 21,360



1/2 pg H Ad

SECURITY

UltraWipe 1.51

This is a digital electronic shredder that allows you to completely wipe out unwanted data, leaving absolutely no trace of it. The software uses the US DoD 5220.22 erasure algorithm. This utility also provides the user with features such as freeing of memory, space and other magnetic traces from the disk surface. It also clears your Internet cookies and temporary Internet files.

Size: *1.4 MB*
Web site: *www.redstrike.com/home*
Best Commercial Alternative: *Advanced Encryption Package 2002 Professional*
You save: Rs 1,918

CACHE AND CCOOKIE MANAGER

X cleaner

Every machine has loads of unwanted files which the user forgets to delete, especially the clutter of temporary files and cookies that accumulate while surfing. X cleaner not only cleans up the clutter but also shreds the unwanted files. It also clears one's AIM username—if you exercise this option before logging out, no other user will be able to logon to AIM with your ID. You can also clear the startup program list without having to edit the registry.

Size: *278 KB*
Web site: *http://aboutyourbreakup.com/xcleaner.html*
Best Commercial Alternative: *Amnesia Cache & Cookie Manager*
You save: Rs 958

CHILD SAFE WEB

We-Blocker 2.0.82

With more and more children using the Internet, parents have become more apprehensive about access to dubious Web sites. We-blocker provides one with the facility of blocking Web sites containing unsafe material for children. It does this on the basis of its own database and it provides the parent (or the user) with the facility to password protect the configuration settings, thereby making it impossible for the child to override the customised settings. One can also block Web sites containing foul language, weaponry, etc. Overall, this software is very easy to use and offers quite a few configuration options.

Size: *2.42 MB*
Web site: *www.we-blocker.com*
Best Commercial Alternative: *Krowser*
You save: Rs 1,250

SCREEN CAPTURING TOOL

Wingrab 1.5

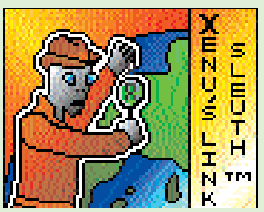
This nifty little utility not only lets you take screenshots but also lets you edit them as well as manage them in an html image gallery (it supports a maximum of 32,700 images). It also lets you print images in batches. You can save the images to four different formats (.jpg, .tif, .png and .bmp). A built-in timer lets you trigger a capture at predefined intervals. Using Wingrab, you can read and write text directly to and from JPG files without decompressing the image, which means there will be no deterioration in image quality. You can also store notes regarding the images.



Size: *1 MB*
Web site: *http://home.chello.no/~wingrab*
Best Commercial Alternative: *SnagIt 6.0.1*
You save: Rs 1,918

LINK VALIDATION TOOL

Xenu Link Sleuth 1.2b



If you are looking for software which checks for broken links, then link up with Xenu, a multi-threaded program that checks Web sites for broken links. The software does link verification on 'normal' links, images, frames, plug-ins, backgrounds, local image maps, style sheets, scripts, and java applets. It also displays a continuously updated list of URLs which you can sort by different criteria.

Size: *432 KB*
Web site: *http://home.snafu.de/tilman/xenulink.html*
Best Commercial Alternative: *The Broken Link Doctor*
You save: Rs 1,296

FTP SERVER TOOL

CesarFTP 0.99e FTP server

This FTP server doesn't require mastery of difficult settings and command lines. Ban/authorise user access rules based on IP a and/or hostname rules. Just a few clicks let you configure your server to share even specific files. CesarFTP also supports quotas and ratios, download speed limitation, limitation of the number of connects, and many other miscellaneous things. With events handling, you can configure automatic processing of uploaded files.

Rs 18,480

Size: *768 KB*
Web site: *www.aclogic.com*
Best Commercial Alternative: *Surge FTP*



Bazaar

Train your sights on these speedy processors, multifaceted Web cams, spacious hard drives and much more

HP ScanJet 5400 scanner (2400 dpi, 48-bit)

Take a preview

The HP ScanJet 5400 is a 2400-dpi, 48-bit scanner. It supports a resolution up to 2400-dpi, which makes it extremely useful when you need to scan images at high resolutions in a short time. It has one of the lowest lamp warm-up times, resulting in an amazing preview time of 8.37 seconds only. The scanner picked up all five colour blocks in the resolution test. In the image quality evaluation test, it picked up the sharp bumps and wrinkles on the face in the test photograph and even scanned the reflection of the dress on the bracelet, which very few scanners have been able to do.



In the IT8 card test, the scanner picked up the RGB colour tones very well in the dark region but degraded slightly in quality in the green colour mode in the light region. This happens when the CCD of the scanner is unable to read the green component correctly in the light region. This scanner is the first of its kind to have an LCD display on board for setting the number of colour copies to be printed when clubbed with a printer. The scan to mail, scan to Web and scan to print buttons, and the copy buttons are also present on the front face. The scanner is slick but longer than others. It comes with both parallel and USB interfaces. The package comes complete with a lot of useful software such as the HP Precisionscan Pro 3.0, HP scanjet copy utility, HP Share-to-Web software, Corel PrintOffice 2000, TrellixWeb Express, HP Print Creator, ACD systems, and ACDSee (Mac) ArcSoft PhotoPrinter Pro 2000.

Price: Rs 14,499
Contact: Hewlett-Packard India Ltd
Phone: 080-5216121
E-mail: princy_bhatnagar@hp.com
Web site: www.hp.com

SPECIFICATIONS:
2400x2400 dpi optical resolution, 48-bit colour depth, A4 size scan area, USB and Parallel interface, weighs 4 kg

HP ScanJet 5400	A-
Performance	
Build Quality	
Value for Money	1/2
Features	
OVERALL	

HP DVD-Writer 100i

Speedster of a Writer

If cutting edge were the only measure, then the HP DVD-Writer would outperform all existing storage solutions. The HP DVD-Writer 100i writes to DVD+RW discs at an amazing speed of 3.32 MBps (2.4x) and fills up a 4.7 GB DVD+RW in under 20 minutes!



The DVD was written using Nero Burning ROM 5.5.5.1, which detected the writer without any problems. Quick erasing the DVD+RW took not more than 2 minutes. The DVD-Writer also works as a 12x/10x/32x CD-R/RW drive and as an 8x DVD-ROM drive. The only problems we faced were of compatibility issues with various DVD-ROM drives. Drives such as the Hitachi GD-7000 did not have problems reading the DVD+RW but the ASUS E612 could not detect the DVD+RW and simply failed to read through.

The package comes complete with one free DVD+RW and HP's software suite, which included MyDVD (for easy creation of DVD-movie discs) and Record-Now for writing data. At Rs 40,000, it is expensive but considering that you get storage options you've never even dreamt of, this is a truly desirable option.

Price: Rs 40,000
Contact: Hewlett Packard
E-mail: rajiv_rao@hp.com
Phone: 080-5216121 - 25
Fax: 080-5276802
Web site: www.hpindia.com

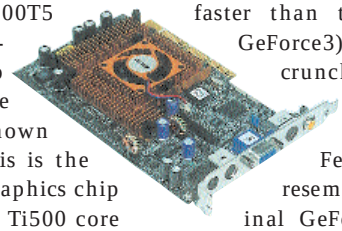
SPECIFICATIONS:
Write: 4/8/12x as a CD-R; 4x/10x as a CD-RW; 2.4x (CLV) as a DVD+RW
Read: 4/8/10/20/32x (CAV) as a CD-R; 2/4/8/20x (CAV) as a CD-RW; 8x (CAV) as a DVD+RW

HP DVD-Writer 100i	A-
Performance	
Build Quality	
Value for Money	1/2
Features	
OVERALL	

ASUS V8200 Ti500 Deluxe (64 MB DDR)

One great package

The ASUS V8200T5 Deluxe features a souped up version of the GeForce3 GPU, known as the Ti500. This is the most advanced graphics chip from nVidia. The Ti500 core runs at 240 MHz (40 MHz faster than the original GeForce3) and can crunch 960 billion operations per second. Featurewise it resembles the original GeForce3, apart from a few additional features



(driver enabled) such as shadow buffers and 3D textures without compromising on frame rate. The onboard 64 MB of DDR memory is capable of a total memory bandwidth of 8 GBps. The card features the proprietary ASUS Smart Doctor, which monitors the health of the card. The heat generated while benchmarking is well dissipated by the heatsink-fan combo. The card comes bundled with 3D VR glasses, with the VR circuit embedded in the graphics card itself. The packaging included a comprehensive manual, games (*Sacrifice, Messiah* and *Star Trek New Worlds*) and the driver CDs. The card also came with all the necessary cables for the integrated VIVO (video in video out). Any machine slower than a 1.5 GHz will bottleneck this card.

Price: Rs 36,000
Contact: Rashi Peripherals
Phone: 022-8260258
E-mail: ho@rptechindia.com
Web site: www.rptechindia.com

SPECIFICATIONS:
Test machine P4 2.2 GHz, 512 MB RDRAM
Benchmarks: 7444 in 3Dmark 2001; 154.7 fps in *Evolva* benchmark (non bump-mapped); 359.2 fps (normal mode), 278.4 fps (high-end), 163.3 fps (max settings) in *Quake III*

ASUS V8200 Ti500	A-
Performance	★★★★
Build Quality	★★★★
Value for Money	★★★½
Features	★★★★½
OVERALL	★★★★

Intel Northwood 2.2 GHz Processor

Standing tall in *Quake*



Intel's new 2.2 GHz processor is the fastest processor as far as clock speed goes. The processor uses the latest 0.13-micron fabrication process, which enables the processor to run cooler, consume less power (the processor now runs at 1.5 V), and scale higher speeds. Another remarkable addition to this processor series is the huge, performance improving 512 KB of L2 cache. Not surprisingly, Northwood's score stood out among others. It stood tall in the *Quake III Arena* test, scoring a massive 359.2 fps in normal mode. The P4 loves gaming, as can be seen by another whopping score in 3DMARK 2001, beating the previous best set by the Athlon XP 1800+ by almost 400 marks (7444 as against 7060). The processor was also tested with Intel's DDR solution (D845BG, with 256 MB DDR SDRAM). We found a difference of about 7-10 per cent in the overall result. Gaming was the only place where the DDR solution lagged behind (by almost 25 per cent). This enhanced P4 truly is a processor that needs applications to push it.

Price: $600 (approximately Rs 28,800)
Contact: Nebula Technologies
Phone: 022-6347156
E-mail: sandip@nebulatech.com
Web site: www.intel.com

SPECIFICATIONS:
0.13-micron fabrication technology, 1.5 V core voltage, 478 Pin

Intel Northwood 2.2 GHz	A-
performance	★★★★
Build Quality	★★★★
Value for Money	★★★½
Features	★★★★
OVERALL	★★★★



Hatim Kantawalla
Deputy Head, Test Centre

"The Intel P4 2.2 GHz is by far the fastest processor in terms of both, pure speed and performance"

IOGEAR ShareView

The two-PC simulator



This is a nifty little kit that allows you to add one more monitor to your existing machine. It can simulate two separate PCs by creating single and multi-user modes. The software even has its own messenger which allows you to message another person using the same CPU. The box came complete with an additional VGA card, the SiS 6326 PCI card. The kit included a multimedia keyboard, which had a PS2 port integrated into it for the mouse, a 15-feet USB/VGA cable, and ShareView software and drivers. The installation was easy and the system was up and running in a short time. The price is relatively high though. The VGA card and multimedia keyboard bundled with it would not cost more than Rs 2,500, which means that the software comes at a rather high premium.

Price: Rs 15,000
Contact: J.S. Equipment
Phone: 022-3810713/18
E-mail: jse@vsnl.com
Web site: www.iogear.com

SPECIFICATIONS:
4 MB PCI VGA card, multimedia keyboard, supports Windows 95/98SE

IOGEAR ShareView	B
Performance	★★★½
Build Quality	★★★
Value for Money	★★½
Features	★★★
OVERALL	★★★

IOMEGA Panther (16/10/40) USB 2.0

A middling performer

The IOMEGA Panther is a 16x CD-Writer and comes with the latest USB 2.0 interface. However, it did not come bundled with a USB 2.0 compliant card, which is a major drawback since very few motherboards support this relatively new standard. The drive's performance was on par with other 16x external drives (SCSI). The writer took about 288 seconds (4 minute 48 seconds) to burn an audio CD, which is slightly on the higher side for its speed and took 488 seconds (8 minute 8 seconds) to burn assorted data on a CD-RW at 10x. The writer was a bit slow

in extracting tracks from an audio CD. The Panther comes with an ample onboard buffer of 2 MB. The writer managed to reach an average read speed of 30x in the Nero CD Speed test. It comes bundled with a host of software such as HotBurn (CD Writing suite), Iomega QuickSync (protects files from deletion, viruses etc), MGI PhotoSuite, Adobe ActiveShare and Musicmatch Jukebox. It also bundles one blank CD-R (but no CD-RW) and a detailed user manual.



Price: Rs 18,000
Contact: Neoteric Informatique
Phone: 022-4172600
E-mail: saxena@neoteric-info.com
Web site: www.neoteric-info.com

SPECIFICATIONS:
16/10/40x speed, USB 2.0 interface backward compatible, 2 MB buffer

IOMEGA Panther	B
Performance	★★★
Build Quality	★★★½
Value for Money	★★★
Features	★★★½
OVERALL	★★★½

Philips 107B3 Flat Monitor with LightFrame II

Who's the bright one?



The 107B3 is the new flat screen monitor from Philips, featuring LightFrame II technology. This feature brightens a select part on the screen. LightFrame II consists of an integrated circuit hard wired in the monitor, which in conjunction with software dramatically increases the brightness of the selected region. This works beautifully while watching movies, images or playing games, as it makes the display very crisp and clear. However, if the area is left bright and you start using applications that involve a lot of text, then the ghosting effect becomes prominent and puts a lot of strain on the eyes. The monitor was put through the Display Mate test wherein it performed satisfactorily. In the screen regulation test, the screen size increased by at least 1 mm, which is tolerable. The monitor even showed a prominent moiré pattern in the horizontal and diagonal resolution test. During normal functioning (without Lightframe II), the monitor didn't show any streaking or ghosting effects. This monitor is capable of an amazing maximum resolution of 1600x1200 at 75 Hz. Very few 17-inch monitors can claim to run at such a high resolution at any decent refresh rate.

Price: Rs 16,000
Contact: Philips India Ltd
Phone: 022-6912255
E-mail: debasish.mitra@philips.com
Web site: www.philips.com

SPECIFICATIONS:
Maximum resolution of 1600x1200 at 75 Hz resolution, 16 inch viewable area, 240 MHz video bandwidth, 96 KHz horizontal scan rate

Philips 107B3	B+
Performance	★★★½
Build Quality	★★★½
Value for Money	★★★½
Features	★★★½
OVERALL	★★★½

Logitech Clicksmart510

Picture hoarder



The Logitech ClickSmart510 camera offers a 1.3 mega pixel still image resolution (software rendered) and a built-in microphone that can be used for video conferencing on the Net. The camera has a USB interface for quick transfer of photos to the PC. The camera is equipped with an 8 MB SmartMedia card, which stores over 120 images at a decent resolution of 640x480. It has two focus settings, Close up and Distance mode. While the quality was pretty neat for a camera of its type, indoor photographs were a little dark despite there being a fair amount of ambient light. The camera comes bundled with a host of software such as the MGI PhotoSuite SE, MGI VideoWave SE, Digital Radar motion detection software, and Intelligent QuickSync. It has good ergonomics and the buttons are smartly placed. If you are going to use it for fun and as a Web cam, then its quality and bundled software will definitely impress you. However, a price of Rs 15,000 makes it very expensive for the resolution it offers.

Price: Rs 15,000
Contact: Rashi Peripherals
Phone: 022-8260258
E-mail: ho@rptechindia.com
Web site: www.rptechindia.com

SPECIFICATIONS:
640x480 pixel resolution, 8 MB SmartMedia card, USB interface, adjustable swivel base included, 4 AAA batteries, 640x480 pixel video capture

Logitech Clicksmart	B+
Performance	★★★★
Build Quality	★★★★
Value for Money	★★½
Features	★★★★
OVERALL	★★½

Creative PC-CAM 300

You deserve a better shot



Creative PC-CAM 300 comes with 8 MB built-in memory, which can store up to 120 photographs at a resolution of 640x480. The camera can take the snaps at a resolution of 1024x768 and has a built-in flash with a setting for red-eye reduction. It comes bundled with a host of software to build Web sites, edit photographs, capture images, and so on. The software, however, will take some getting used to. The installation process was too long and we had to restart the system for it to detect the camera. The camera also has a built-in microphone for capturing audio while recording a movie. The movie can be captured at resolutions ranging from 160x120 to 640x480 pixels. The images were very dark even in a well-lit room and distant photographs were a bit washed out and hazy, as

the lens doesn't have any focus settings. You'll find many other brands available in the market that can do a better job for less.

Price: Rs 10,000
Contact: Compuage Infocom Limited
Phone: 022-8305501
E-mail: info@compuageindia.com
Web site: www.compuageindia.com

SPECIFICATIONS:
640x480 pixels CCD, 8 MB built-in memory, built-in microphone, works as a Web cam, USB 1.1 interface

Creative PC Cam 300	B+
Performance	3½
Build Quality	4
Value for Money	3
Features	3½
OVERALL	3½

EasyOffice Premium

All too easy



EasyOffice Premium is a complete office suite with a long list of sub-suites. To start off, it has two word processors: EasyWord, which is compatible with Adobe Acrobat PDF files and comes with features such as voice read back of incorrect spellings, and SimpleWord word processor for low-end machines. Both of these are fully compatible with Microsoft Word documents. The sub-suites include an integrated image editor, voice recognition software, Easy Spreadsheet (which is fully compatible with Microsoft Excel), Easy Presentation (an integrated PowerPoint viewer), Easy Contact Manager for importing contact lists from Microsoft Outlook, and a lot more. The interface is easy to learn even for a newbie. The package offers a complete solution for small offices and places where there isn't a high demand for features. EasyOffice is available for free download, but many features such as Easy VoiceRecognition and Easy Backup are not enabled in it.

Price: $49.99 (approx Rs 2,400)
Web site: www.e-press.com

SPECIFICATIONS:
33 MB download size, Win 98SE/Me/2000/XP compatible

EasyOffice Premium	A-
Performance	4
Ease of use	4
Value for Money	3½
Features	4
OVERALL	4

MGI PhotoSUITE 4.0

A can-do image editor



MGI PhotoSuite 4.0 is the latest image-editing tool from MGI. The software is a low-end tool and comes with very few filters and effects for editing photographs. The software can acquire images directly from a digital camera and scanner. There are six categories of special effects included in PhotoSuite 4.0, which in turn have a few effects that can be directly applied to photographs. The software has a simple interface and working with it is easy. This software comes bundled with many scanners and cameras for low level image editing.

At a price of $49.95 it is a bit expensive considering the features it offers.

Price: $49.95 (approx Rs 2,398)
Web site: www.mgisoft.com

SPECIFICATIONS:
63 MB install size, Win 98SE/Me/2000/XP compatible, works with Kodak Picture CD

MGI PhotoSUITE 4.0	B+
Performance	3½
Ease of use	4
Value for Money	3
Features	3
OVERALL	3½

ISM 2000 Office

Multilingual manager



ISM 2000 installs different Indian fonts such as Devnagri, Tamil, Gujarati, etc on your PC for use with any applications such as Microsoft Word, WordStar, Adobe PageMaker, etc. The software comes with a hardware dongle, which made the installation process a little difficult, but once up and running, it did not give any further problems. The software comes bundled with a nifty Hindi 'type' sticker for the keyboard. The package had two CDs, one an installation CD and the other containing clipart images. The manual has detailed instructions on how to use the Devnagri fonts, complete instructions on changing 8-bit ISCII code to ISFOC (Indian Script Font Code), and other such conversions. The software has a built-in dictionary for spell checks and has bilingual support, which can be selected from the ISM 2000 dialog box. It supports a wide variety of fonts and is a good buy for people in the DTP field.

Price: Rs 10,000 + taxes
Contact: Centre for Development of Advance Computing
Phone: 020-5694090
E-mail: info.gist@cdac.net.in
Web site: www.cdacindia.com

SPECIFICATIONS:
Support for almost all Indian languages, supports Win98SE/Me/2000 and Novell Netware

ISM 2000 Office	B+
Performance	3½
Ease of use	4
Value for Money	3½
Features	3½
OVERALL	3½

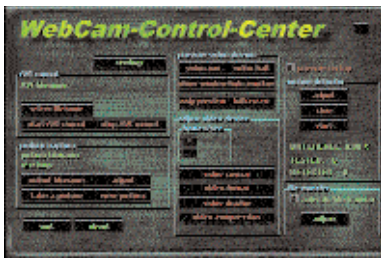


G.S. Virdi
Editor, Smart Computing

"ISM is the most formalised package which allows you to create even bilingual Web pages"

WebCam-Control-Center 5.5

A Web cam controller



This software controls different elements of a Web cam such as adjusting the brightness, contrast, hue, etc. The software is plain and simple. You can select from 10 different compression modes including formats such as DivX Codec 4.12, Cinepak Codec by Radius and so on.

You can select from the different resolutions offered, ranging from 160x120 to 640x480. The software even has a motion detection facility built-in, which lets you use your camera as a security camera when you're away. It lets you select the sensitivity of motion when it starts recording and even select the area within the frame. The software lets you take pictures from its own interface without having to click the shutter button on the camera.

Price: $29.95 (approx Rs 1,438)
Web site: www.webcam-control-center.com

SPECIFICATIONS:
3.15 MB install size, Win 98SE/Me/2000, supports resolutions up to 640x480 pixels

Webcam-Control-Center	B
Performance	
Ease of use	
Value for Money	
Features	
OVERALL	

The Sleuthhound! Pro 3.2

Top dog



Sleuthhound! Pro is a search engine plugin for the desktop that can search anything on the local hard drive, like the Windows search engine. You just need to type in a keyword from any document present on your hard drive. Sleuthhound! will display all documents with links to the documents and a preview (first four lines). Boolean operations like AND, OR and NOT work with Sleuthhound!. You have to remember to create search zones. This means assigning relevant folders or partitions as a particular zone and naming them accordingly in order to speed up the process of finding files. You can even search the Web by right-clicking on the main window, which launches the Sleuthhound! Web page where subcategories such as MP3 search and image search engines are available. The program doesn't take up much disk space and isn't too heavy on the system either. But it comes at a price of $79.95.

Price: $79.95 (approx Rs 3,838)
Web site: www.isleuthhound.com

SPECIFICATIONS:
5.6 MB install size; Boolean search supported; schedule feature built-in for zone update

The Sleuthhound! Pro	B+
Performance	
Ease of use	
Value for Money	
Features	
OVERALL	

Maxtor D540X 160 GB Hard Drive

The biggest of 'em all



This hard disk is currently the largest available in India. It has four platters aggregating 160 GB. You will need to buy an additional Ultra ATA/133 IDE PCI controller card because most motherboard BIOSs don't detect a drive larger than 130 GB. The drive can only be detected using the proprietary application (MaxBlast Plus) bundled with it.

With Windows 2000 Professional, its performance matched that of similar speed drives available at a lower capacity. It logged a low CPU utilisation of 2.04 per cent in SiSoft Sandra Professional. Its average access time of 8 ms was almost on par with most other 5,400-rpm drives. With a rupee to MB ratio of 10 paisa per MB, this drive is a steal.

Price: Rs 18,500 + tax
Contact: Karma Distributors
Phone: 011-6420450
E-mail: naresh@esysmail.com
Web site: www.karmasg.com

SPECIFICATIONS:
160 GB capacity, Ultra ATA/133 interface, 2 MB cache, 5400-rpm rotational speed, four platters
Benchmarks: 5500 in High-end Disk Winmark 99; 34 MBps sequential read; 6 MBps random read; 29332 Kbps sequential read speed and 2543.8 Kbps sequential write speed in HDTach; 0.95 per cent CPU Utilisation (Iometer); 124.91 total I/O per second

Maxtor D540X 160 GB	B+
Performance	
Build Quality	
Value for Money	
Features	
OVERALL	

PowerARCHIVER v7.02

More power to the archives

PowerArchiver's archiving utility reads most file formats such as ACE, RAR, Zip, TAR, etc. It has a simple skinnable interface. We tested it using a 1.89 MB folder containing Excel files. The folder was compressed to 1.2 MB—a compression efficiency of around 30 per cent. The best part is that the file can be saved as a Zip, CB, LHA, TAR or BH. We saved the file in the Zip format and got the above-mentioned results. PowerArchiver also inherently uses the anti-virus loaded on the system to check for viruses (this has to be defined by giving the correct path for the anti-virus during installation). This archiver also lets you perform smaller tasks such as renaming and deleting files from within the application itself.

Price: $19.95 (one license) (aprox Rs 958)
Web site: www.powerarchiver.com

SPECIFICATIONS:
Supports most compression formats, has a skinnable toolbar, has complete integration with Windows

PowerARCHIVER	B
Performance	
Ease of use	
Value for Money	
Features	
OVERALL	

GET A Grip

A secret agent needs to be on his toes always and what better way to keep the mind and reflexes razor sharp than a spot of gaming and matching wits and skills against worthy adversaries?

And I have the best of all the necessary paraphernalia that an ace gamer should have—a GeForce3 graphics card, all the RAM I could ask for and a machine tweaked to perfection. But something's missing. For a truly immersive gaming experience what I need is something that will let me feel the bump and grind of the game. Hence I asked to be put on 'Mission: Gaming Peripherals'.

Early on in the mission I realised that there isn't a one-size-fits-all, versatile peripheral in the market. If it's versatility you are looking for, nothing really beats the old keyboard and mouse combination. Most PC games are not originally designed with gaming controllers in mind; they work better with the mice and keyboard arrangement. This is especially true with first person shooter (FPS) and strategy games, although you do get tailor-made mice like the Razer Boomslang and the Strategic Commander, one NRI uncle away.

An excursion to the Mecca of hardware, Lamington Road, and this is what I found: the gaming hardware was of two broad categories—cheap and functional, and feature laden and expensive. If money is no issue for you, there are peripherals that cost more than the PlayStation. Logitech and Microsoft have gamepads, steering wheels, and joysticks that are rugged, easy to use, feature rich, with reprogrammable buttons and force feedback. The Microsoft SideWinder Precision Pro Joystick had a price tag of Rs 5,000. The Logitech Wingman Extreme Digital 3D (nothing 'extreme', 'digital', or '3D' about it) had an asking price of Rs 2,600. These are the most expensive non force feedback joysticks I came across. The force feedback upgrade came at an average of Rs 3,000 more. Games are a lot more gripping with force feedback—you can feel the bumps on the road while driving on a force feedback wheel, or the rumble of your aircraft when it gets hit. Great for enhancement freaks, but of course all this comes at a price

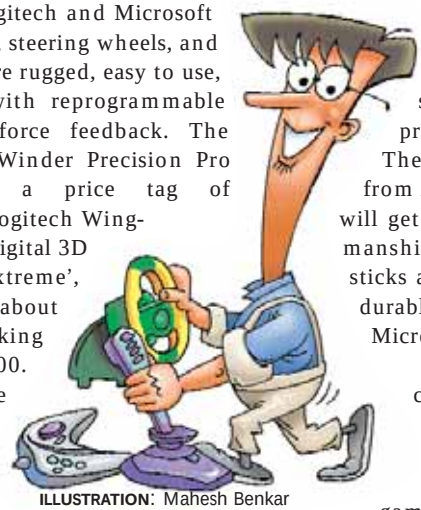


ILLUSTRATION: Mahesh Benkar

There's a glut of lesser-known imports at Heera Panna, an imported goods shop in Mumbai, and you get pretty much what you paid for. The price range for joysticks started from Rs 500. The expensive ones had more buttons and thicker plastic. Frontech had a good selection of joysticks in the price range of Rs 550 to Rs 1,300. The cheaper makes of joysticks from A4-Tech, Frontech and Dexxa will get the job done but the workmanship and precision on the joysticks and steering wheels is not as durable as those from Logitech and Microsoft.

If I were to buy something cheap, I'd go for a gamepad as they can stand a lot of abuse and can work for a wide variety of games. The E-Z gamepad from A-4 Tech was just for Rs 350, a must buy if you're tired of playing console games on the keyboard.

There are a lot of other extras you could go for, like Virtual Reality (VR) glasses. These aren't available as a separate add on, only select ASUS cards have this feature. The 3D VR glasses can make all your Direct 3D games jump out from the screen and the newest beta drivers will also work with OpenGL. It takes some getting used to at first but the effects can be really amazing. It would be wise to invest in a headphone and microphone set, now that voice in multiplayer games are becoming a widely accepted standard.

You can never have too much of a good thing can you? Now that my report is ready, my next mission is to convince the Big Boss to finance my new arsenal of gaming peripherals.

Hard Disks

BEST BUY OF THE MONTH

If you've been looking to upgrade to a higher-capacity hard drive, now's the time to pull out your wallet and spend some money.

Hard drives are crashing to prices as low as Rs 4,650 for a 40 GB capacity and prices are expected to fall further.

What to Buy

SHOPPING TIP

Game	Best suited peripheral	Price Range	Caveat
Flight Simulator, Space Sim	Joystick	Rs 500-8,000	An unexciting range of games and lack of versatility means that only flight sim enthusiasts will opt for this
Sports, Arcade, Fighting, Console Ports	Gamepad	Rs 350-4,500	The high-end gamepads aren't all that they're cracked up to be
Racing	Force feedback wheel	Rs 2500-10,000	A steering wheel without force feedback is an utter waste of your time
FPS, Strategy	Keyboard and mouse	D-uh, you already have it	Buy a wireless mouse and keyboard combo, or an optical mouse

Finally a device that can record your movies and music on CDs and play them back—absolutely hassle-free



PHOTOGRAPH: Jiten Gandhi

VIDEO ON DEMAND

It looks like something that resulted from a cross between a VCR and an iMac. Available in three colours—raven grey, ice blue (featured above) and lava red—the terapin from Terapin Technologies (***www.terapintech.com***) is a neat device that combines amazing functionality with great looks. The Terapin works like a digital VCR and records both audio and video on CD-R/RW. The Terapin, in one stroke, brings together the functions of a VCR with a better quality and higher degree of reliability. It uses the now phenomenally popular and inexpensive CD-R/RW media for recording.

The joy of recording

Learning how to use the Terapin to record and playback songs and movies is easy. It behaves just like any ordinary VCR in your house. You can stop it, start it again, play any track you want, and even rewind and forward at variable speeds. You can also switch to specific tracks—there was no way you could do this with a magne-tic tape. And once you've finished recording, press 'Finalize' to complete the process. This allows you to play back the CD on computers and VCD players.

The Terapin is also multi-system compatible with support for both NTSC and PAL video formats. For audio applications, Terapin features automatic record-synchronisation from an external digital audio source via its coaxial or optical inputs. It comes tightly packed and well equipped with a remote control and a manual listing of all the functions.

What you can do with Terapin

■ **Convert VHS to VCD**



If you have some precious home videos or movies on video tape, you might want to ensure a longer life for them by transferring them to the more reliable CD medium.

■ **Record live TV broadcasts**



This is where the Terapin really emulates the VCR. You can record your favourite TV programmes, or maybe the World Cup Finals onto a CD and enjoy it over and over again.

■ **Digitise and edit home videos**



You can now transfer videos from your camcorder or another video source and convert it into the ready-to-edit digital format. Use a video editing tool to edit and manipulate them.

■ **Create audio CDs**



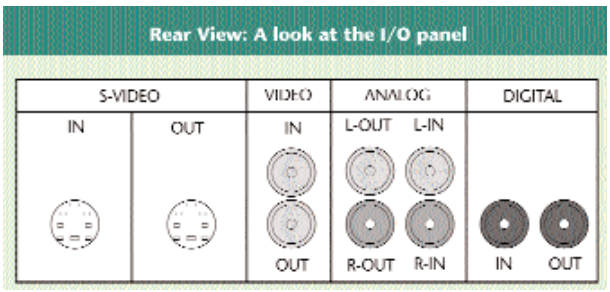
Compile your own Top of the Pops collection CDs by recording directly from any audio source, and even from TV or VCD.

■ **Audio and video playback**



Use it as a player for your home entertainment system. Whether it's movies on VCD or the latest Metallica album, the Terapin plays it all.

The best part about the Terapin is that it is the first home recording device that lets you record audio and video directly to a versatile digital media such as the CD. While PC users with the right kind of hardware (video capture cards) have been able to record video on CDs, the Terapin delivers this functionality to everyone in a single device. It does not need any third-party software; users don't need a PC to record or play music and movies. Everything good comes at a cost, of course. Terapin comes at Rs 29,000.



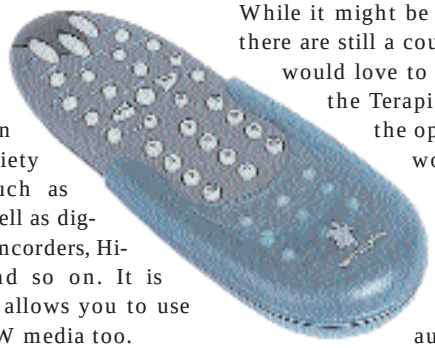
The Terapin's rear panel resembles that of a traditional VCR and in addition it also includes digital in/out ports

INFOGRAPHICS: Jaya Shetty

Like the VCRs that most of us are familiar with, Terapin works well with a variety of analog sources such as Cable TVs, VCRs, as well as digital sources such as Camcorders, Hi-Fi music systems, and so on. It is media-friendly and it allows you to use the re-writeable CD-RW media too.

Taking versatility further, the CDs that Terapin records, run without a fuss on any CD/VCD player or computer, irrespective of whether you have used CD-R or CD-RW media. While testing, we faced no compatibility issues with the Terapin, which speaks volumes in this standards-plagued age.

The Terapin, like any other VCR, also comes with a fully functional remote control. The only difference is that the Terapin remote control has probably every single function that the main panel has, right at your fingertips.



Aiming for perfection

While it might be asking for too much, there are still a couple of things that we would love to see incorporated into the Terapin. First of all, adding the option of MP3 Playback would make Terapin a complete modern home entertainment system. Including preset recording modes will ensure auto-finalisation of a CD-R as soon as the CD nears completion. Perhaps the most important factor would be enabling on-the-fly MPEG-4 compression. Enabling this using hardware could be relatively easy and would allow recording of nearly 2 hours of video content on a 700-MB CD-R instead of the current 60-minute limit, without any reduction in quality.

Lastly, another wonderful addition to the Terapin would be the inclusion of a TV Tuner module. This would allow the routing of cable TV signals directly through the Terapin. The ability to then tune or program channels directly from within the Terapin would make it the ultimate VCR replacement.

Apart from that, the Terapin is the most perfect recording and playback device in the market. No reason why you shouldn't go Terapinning, if you don't mind the cost, that is.

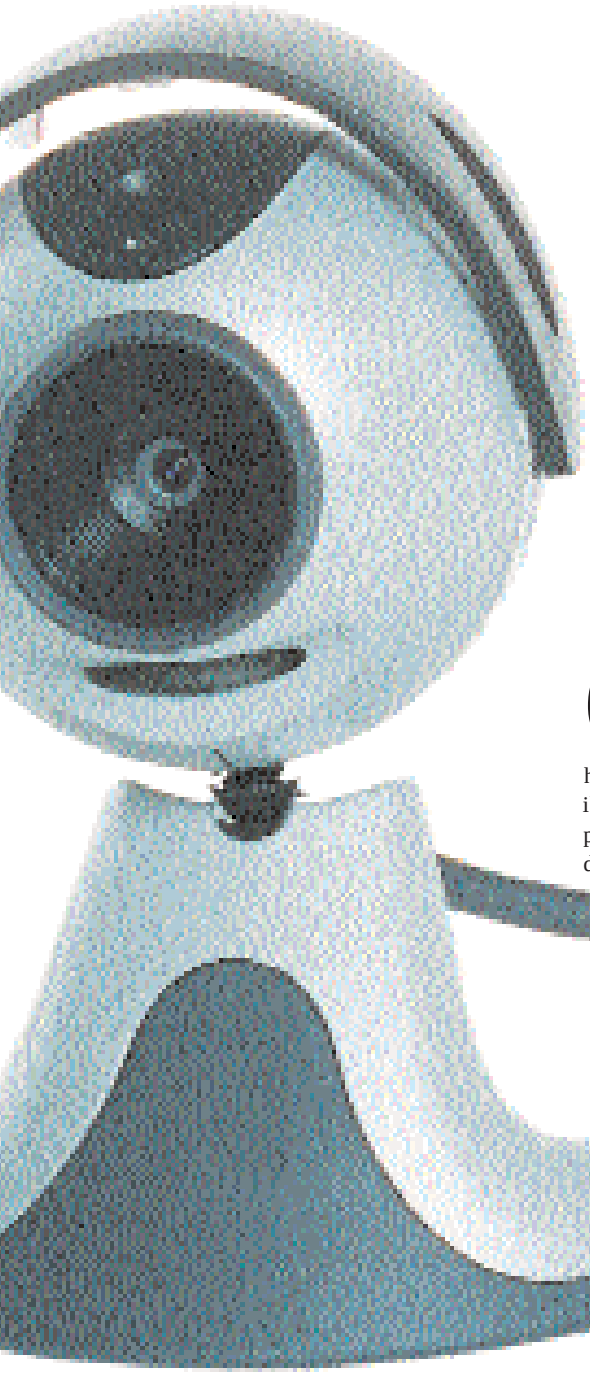
HATIM KANTAWALLA

Your VCR's Successor

PARAMETERS	TRADITIONAL VCR	TERAPIN VIDEO RECORDER
Input device	TV, VCR, camcorders	TV, VCR, DVD/VCD player, camcorder, DV camcorders, audio systems
Output to	TV, VCR	TV, VCR, DVD/VCD player, camcorder, DV camcorders, audio systems
Output media	VHS tapes	CD-R/RW discs
Playback Duration	VHS tapes in 90, 180, 240 minute variants	CD-R/RW allows 60 minutes of video or 74 minutes of audio
Compatibility	VCRs	VCD/DVD players, PC, MAC, audio systems
Scheduling/ programmability	Scheduling of channel, time and duration specific recording	No such functionality; everything is manual

Want to own a Terapin?

You can buy the Terapin in India through Monarch Video Vision by sending an e-mail at viren@bom2.vsnl.net.in or calling 022-2619022.



eye SPY!

A three-in-one workshop on setting up your Web cam to broadcast images, work as a security device, and take still photographs

Connecting a Web cam to your PC used to be a complicated task, what with the dedicated cards or parallel ports. Today, however, most cameras are USB compatible (USB is a faster data communications port best suited for video) and come bundled with manuals, supporting software and drivers. Now, connecting your camera to your machine is as simple as plug-and-play. Your Web camera to PC connector cable will usually have a flat rectangular pin that you can connect to your computer's USB port. The other end of the chord is generally attached to the camera and cannot be removed. In case of combo cameras, which are used as still cameras, video cameras and Web enabling devices, the chord is detachable.

Once you have successfully installed the camera, all you need to do is install the appropriate drivers and software. When you boot your computer after installing the hardware, the operating system will detect the new hardware that's connected. The OS will then take you through the process of setting up the drivers for the camera. If your camera is not detected, install the software application that accompanies your camera. This should help you install the drivers automatically. If the device you bought did not have any accompanying driver CDs, log on to ***www.drivershq.com*** and try locating the specific driver for your camera or a generic driver.

After the hardware and software are in place, check the equipment. Launch the software that accompanies your camera and see if you are able to view the image that is being captured by the camera. Adjust the settings to your requirements—they are more or less the same across all cameras. Frame rates and other cosmetic

PHOTOGRAPH: Mexy Xavier

Things you need

1. A computer with more than 400 MHz clock speed and minimum 128 MB RAM.
2. A Web camera of your choice.
3. Preferably an ISDN line (64 Kbps) since video broadcasting requires more bandwidth than normal text data transfer.

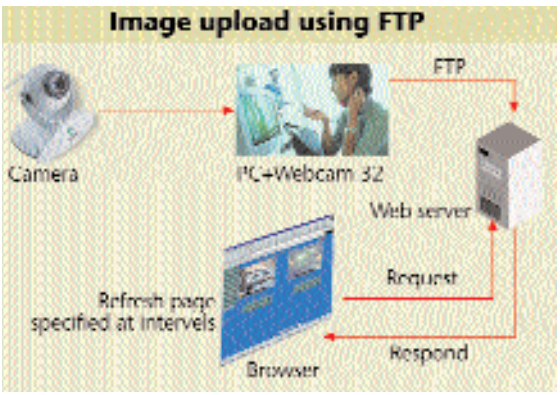
Posting Photographs

If you are a proud Web site owner, you might want to post images on your site. There is software available that helps you grab frames which can be used to take still shots with the aid of your Web cam. Webcam32 can also be used to grab still images. Set the focus of the camera on the object you want to take a low-resolution image of. Click on the 'Camera' icon in the main window of the software—this will throw open the Preferences window and point to the 'Capture' option. Click on 'Still Grab' if it's not selected. Your object is shown on the left-hand side of the window. Adjust the camera settings if necessary. Click on the 'Grab' button to take a photograph of the image and save the image on your hard disk in JPEG, BMP or PNG format. Now whenever you want a low-res image on your site, you know what to do.

adjustments can be tweaked using the software. Usually there are no controls on the camera except perhaps the latest combo models, which have a few buttons for recording video and clicking photographs.

Look world! Here I am

You might want to use the Web cam to let the Net world get a look at you, to monitor your house, check on the baby sitter while at work, and so on. In fact, if there is something that you would like to monitor remotely, then broadcasting via a Web camera is the best option. You can use certain software to capture the image from your camera at regular intervals and then upload it to your Web server. The principle is simple. Someone views a Web page on your site. The page has an image, which is also located on the Web site. When you constantly update the image on the site and at the same time refresh the Web page the user is viewing, the viewer feels as if he is seeing a moving video in slow motion. A high-speed Net connection can aid you in streaming the video live instead of capturing images and dropping them on the Web site.



INFOGRAPHICS: Jaya Shetty

FTP upload of images using Webcam32

FTP upload: Webcam32 (trial version available for download at ***www.webcam32.com***) is a good broadcasting software that allows you to do FTP image uploads and even live audio-video streaming. Download the software from the site and install it. When you launch the application, it asks you to enter some details about the FTP server, username and password. If you have Web space (you need to have one for this exercise), either rented or otherwise, you can use it to upload your images. In this example we used a free FTP Web space provided by Yahoo-Geocities (ftp.geocities.com).

Before the application can actually get into action, you need to perform certain tweaks with the Webcam32 software. Enter your appropriate FTP server, username and password when prompted.

You can link the Web cam to a Web page on your site for others to see. For instance, your Web site might have a page with an image link such as <IMG SRC=http://www.geocities.com/vidyaramanan/digit/thinkdigit.jpg> via which your acquaintances can see your image captures through the Web camera. The command instructs the browser to fetch the image from www.geocities.com/vidyaramanan/digit. As the file thinkdigit.jpg on the Web site gets updated based on the upload intervals setting, the viewer will see newer images every time the page refreshes. Since continuity is maintained, it will appear as if there is a live stream of video. The drawback of FTP uploading of images is the lower frame rate. You really can't have faster refreshing and uploads as it would flicker and provide very bad output to the viewer. The solution? Streaming!

Faster video via streaming: Webcam32 has the ability to camouflage itself as a Web server. Unlike the FTP uploads where a static image is stored and uploaded, in this method, an image is captured by the camera and directly delivered to the browser without waiting for a refresh time. The browser is instructed by the Webcam32 software to accept the images till it sends an end signal. Since this is a continuous process, the frame rates are better.

How exactly does this happen? Let's take an example of a link that would be available on a typical Web cam page, say, <IMG SRC="http://www.thinkdigit.com:port/video/push>. Here www.thinkdigit.com is the computer on which the Webcam32 software is running and port would be any number via which the software listens for requests. So when a viewer is trying to view the camera from this page, his browser is linked directly to the machine on which your Webcam32 software is running. Network

Some popular online Web cams

http://cn003461. phidji.com/ wow/index.asp
Launched in 1999, this site gives you single-click access to Web cams hosted across continents.

http://www.earthcam.com
Outdoor cams are categorised and listed alphabetically here.

http://dsc.discovery.com/cams/cams.html
This is Discovery channel's Web cam, which takes you into the wilder side of the world in the safety of your computer monitor.

When buying a Web cam, check for...

✔ **Resolution:** A camera's quality is weighed against the resolution it supports. So choose a camera with a good resolution. Most Web cams offer a resolution of 320x240, which is good enough for normal applications.

✔ **Connectivity:** USB connectivity, since it makes connecting a Web cam as easy as plug-and-play. Your PC needs to have a USB port too, of course.

✔ **FPS supported:** Watch out for the frame rates that the camera will support (at least 25 fps at 320x240). This is important or else the video quality would suffer. Dial-up users will have to bear lower frame rates.

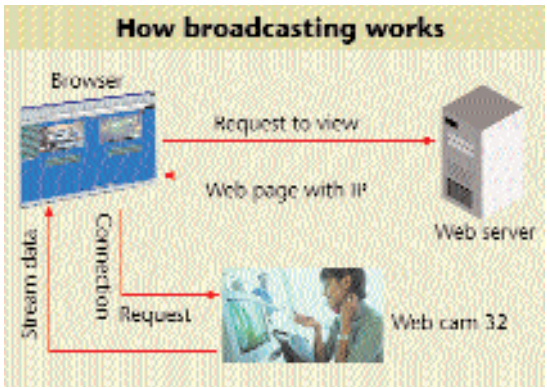
✔ **Software and drivers:** Buy a camera that comes with software drivers and spare yourself a long-drawn Web hunt. Also check for bundled applications.

Your own Private Eye

Looking for a security device? Use your Web cam to build your own security and motion detection system. A webcam coupled with a software capable of detecting the movements and raising an alarm based on movement can prove a worthy security system. Download motion detection software like Gotcha and Inetcam from ***www.gotchanow.com*** or ***www.inet-cam.com***.

After you have installed Gotcha and launched the software, select Properties from the Options menu. Click on the Detection tab in the window that pops up. By default, Gotcha is set to capture one frame for every 5 minutes. You can choose to set the time frame according to your needs. Once you have set all the other options, click on the Observe button on the tool bar (the small button with an eye on it). Gotcha starts monitoring your area of interest through the eyes of your camera. You can choose to e-mail the images to your mailbox and also raise an alarm in case an actual intrusion is detected. The sensitivity of detection can be set in the Detection Properties option.

bandwidth is consumed and a connection established with the Webcam32 software for each client connected to your camera. The transmission of the image should however be stopped at some point of time to avoid network hogging. Webcam32 has a configurable option using which you can terminate the connection with a browser after a particular time frame or after delivering defined kilobits of data, whichever comes first.



Live streaming using Webcam32

You need to spend some time configuring the TCP/IP settings in the Webcam32 software. To do this, go to ***File > Preferences*** and choose the TCP/IP option on the left. In the features subsection, make sure all options are enabled except RCM Control. Thereafter, choose the Access tab, enter the Remote Access Port, and in the server push tab, enter appropriate push interval and size. You are done.

with a permanent connection to the Internet.

When you connect to your ISP through a dial-up connection, your computer is assigned an IP and the IP changes each time you connect. Now a Web cam viewer connects to your streaming video service through the IP entry available on your Web page. Since the IP changes every time you reconnect on a dial-up, does it mean you have to change the IP entry on your page every time manually? Not in the least. Webcam32 has a solution. Make a standard page with an entry such as ***<IMG SRC=http://%%IP%%:8888/video/frame>*** locally on your hard disk. From the File menu choose Preferences. There choose ***FTP > IP UpLoad***. On the right hand side enter the path of the file with the above-mentioned entry. Check the appropriate boxes below, which state whether to upload pages while Webcam32 starts up or to upload it when the software detects an IP change.

Once you are done with the settings, connect to the Internet by dialling your ISP number. Once the PC connects to the Internet, it's assigned a new IP. Webcam32 reads this new IP address and replaces the '%%IP%%' entry in the above HTML image tag and uploads the page to your site.

There are several other uses you can put a Web cam to. As you become more comfortable with the operation and handling of this device, you will find more to do with it.

VIDYARAMANAN S.

Web cam Options in India

What about dial-up users?

All that we have stated before works perfectly for someone using a fixed IP computer



Creative Webcam CLA USB
Price: Rs 2,600
Contact: Compuage Infocom
E-mail: info@compuageindia.com



Logitech Clicksmart
Price: Rs 8,000
Contact: Rashi Peripherals
E-mail: ho@rptechindia.com



D-Link - DSB c300
Price: Rs 3,500
Contact: D-Link India
E-mail: ssehgal@dlink-india.com

The other options

A cheaper alternative always exists. People who just want to have a feel of the Web cam without spending too much can try various Taiwanese and Chinese models that can be found in computer hardware shops.

Typhoon (Easy Web cam): Rs 1,650
Rookie: Rs 1,800
Dialbox Arisoo: Rs 3,000



JUST DIVX IT

Convert your DVDs to DivX format and preserve your favourite movies in top-notch condition forever

DVDs, though excellent for playback and storage, are not exactly infallible by nature. They meet with accidents, get scratched, and the chances of you damaging your favourite DVD are as high as all those CDs that you've already damaged. A back up is a back up, always important, so wouldn't it be better if you had a safe place to store that gigantic movie collection you've been busy hoarding?

Well, you do have a place, a format, that's not as large and is of high quality—the DivX format. This will give you a backup file that is of very good quality, is not too big and more importantly, easily stored and played.

DivX-encoded movies are half the size of MPEG-1 and give twice as good quality

Necessary ingredients

Encoding a DVD to DivX involves major processing power and loads of free hard disk space. You can forget about any conversions unless you have a processor of 1 GHz or more and a big hard disk (anything above 40 GB). At least 256 MB of RAM would be nice, although you can get by with 128 MB, but no compromises on the processing power and hard disk space. Encoding takes up almost 100 per cent of a processor's capability.

Our test bench was a Pentium-III running at 1.12 GHz with 256 MB RAM and a 20 GB hard disk. On this bench, it took around 2 hours and 26 minutes to convert a 112-minute DVD into DivX (DivX 4 constant bit rate) using the default resolution and settings. The same movie took around 5 hours and 22 minutes to convert on DivX 4 2-pass. EasyDivX was the only application running on the PC during the conversion process! We didn't try the DivX 3.11 VKI encoding option due to legal issues.

Now for the things you need to install on the PC other than the conversion software. First of all, you need to have a good software DVD player like PowerDVD. You will need to have the DivX Codecs (DivX 4.12 and DivX 3.11 VKI) installed as well. Windows Media Player is yet another essential tool for playing back the output file.

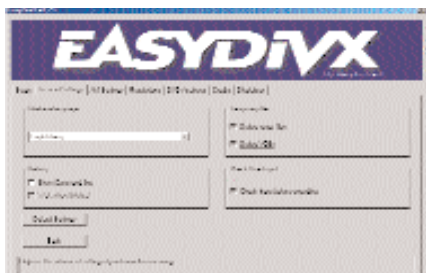
DivX-ing those DVDs

The software we will be using for converting DVD to DivX is EasyDivX. You can get hold of EasyDivX v0.792 (a 1.93 MB download) from ***http://easydivx.does.it***. A link for downloading DivX 4.12 is also present on the same page. It is perfectly legal to use EasyDivX if you are only making a single backup of your own DVD. (*Have a look at the box, 'DVD conversion essentials' to get the DVD to DivX conversion basics right*)

Get, set, DivX

Time to start the encoding process. Play the DVD using PowerDVD. In order to start EasyDivX, click on the Advanced tab and then again on the General Settings tab. Here, click on AVI Settings.

Check the 'Delete temporary files' and 'Delete VOBs' options to delete the



Save space; get rid of temporary files and VOBs

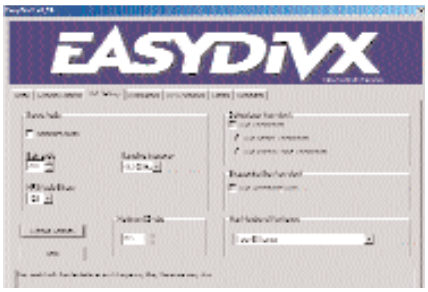
What is DivX?

DivX is a Codec that helps you compress those big media files into a very small size. For example, while converting your DVD into DivX, you will be able to convert the MPEG-2 video and audio files to about one-eighth their size or less (an approximate measure). If you have a DVD that runs to about 7.5 GB, you will be able to convert it to DivX to fit onto a CD of 650 or 700 MB. Of course, the quality won't be as good as that of DVD, but the picture is still pretty good—much better than the other formats around. You will be able to get quality ranging from the kind used for streaming over the Net to near-DVD quality. The most common form of the DivX file is .avi.

Technically speaking, DivX is a digital video compression format (called a Codec), which is based on the MPEG-4 standard from DivX networks. There are two versions of DivX around. One is the original version of DivX, which has versions in the form DivX 3.xx. For example, DivX 3.11 is the original format. This format is basically a hacked version of Microsoft's MPEG-4 v3 Codec, since MPEG-4 v3 did not allow encoding into the .avi format.

The other and newer DivX version is DivX 4.xx. Project Mayo, an open source initiative, developed this format from scratch. The latest member in the 4.xx family is DivX 4.12. We have used this Codec in our workshop. Please note that versions 3.xx and 4.xx are not compatible with each other.

You can download the DivX Player and the DivX Codec 4.12 from ***www.divx.com*** or directly from ***www.download.com.***



Tailor file size to your requirements

temporary files from your hard disk after the conversion is done. Now select the 'Maximum CD size' you would like. The default value is 635 MB. Leave it at this value if you are using a 650-MB CD. Else change it to the required value.

EasyDivX does the conversion in a series of steps. Let's take a look at them, one step at a time.

The default option is 'Auto Select Movie'. Leave this option on until you're familiar with the fine art of ripping. This option selects all the VOB files you need to rip onto the hard disk. You can close PowerDVD once you see the .vob files under 'Available Files'.

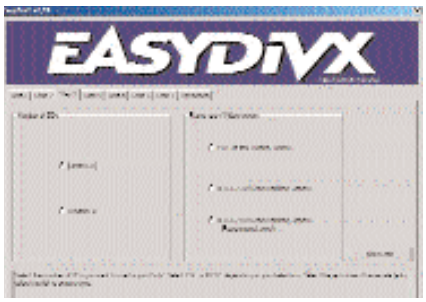
Select the VOB files you want to convert if you're using the 'Manually Select VOBs' option. If you are not sure about which VOB files to convert, select all of them. Use the 'Select Files From Hard Disk' option if you have VOB files already on your hard disk.

Click on 'Next Step' once you are through with the selection.

Enter the length of the movie in minutes in the text box. You can get the movie length from the DVD pouch. Select the type of sound format you want from Stereo and AC3. Select the AC3 option only if you have a multichannel soundcard or if you are burning two CDs. Click on 'Next Step'.

Here, select the number of CDs you want the DivX file to come in. If you want to compress the file in a single CD, leave the 'Single CD' option on. This will be of lower quality because of the smaller file size.

If you want to play the output of your DivX movie on a TV, change the 'Frame rate' or 'Video system' option to PAL. This is the video system we use in India. If you will be playing it only on your PC, leave the default option (NTSC 29,976) on.



Specify how many CDs the file should take

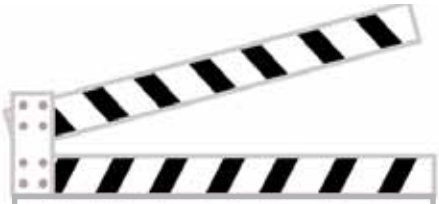
Specify the Aspect ratio as 4:3 if you want the output display to be the same as that of your DVD. Set the Codec option to DivX 4 2-pass for the best quality. Keep in mind that this will take longer than the other two Codec options. (On our test bench it took nearly 2 hours 30 minutes to encode using the DivX 4 Codec at constant bitrate option.)

DVD Conversion Essentials

The term ripping is used while converting DVDs to other formats. It is important to understand that ripping is just one part of the conversion process. The other important steps involved are encoding of audio/video and multiplexing.

DVDs consist of VOB and IFO/BUP files. VOB video files consist of video and audio streams combined (multiplexed) together. IFO files have information about how the DVD has to be played. BUP files are backup files for the IFO files in case they get corrupted. It is important that you include IFO/BUP files during ripping, otherwise the ripped files will play incorrectly.

Now comes the (g)ripping part! DVD files are encrypted using a method called CSS (Content Scrambling System) encryption. CSS allows you to copy DVD files onto your hard disk, but you won't be able to play them. Ripping lets you get around this encryption and copy the files onto your hard disk. The copied files will be in a format that can be played by software DVD players. The video files are then encoded by EasyDivX. The next step is to decode and encode the audio files into stereo/AC3 format as you have specified. The last step is to multiplex the video and audio files.



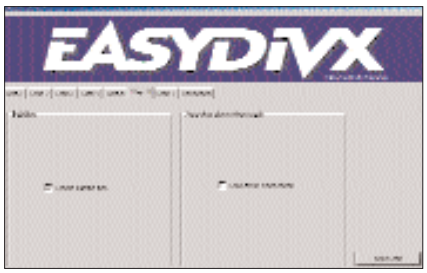
Watch out for...

Do not convert unless the DVD belongs to you and make only one back up for personal use. You break copyright laws if you lend, rent out or sell your backup to someone else.

You CANNOT use DVDs that are not of your region. India's region code is 05. If your DVD's case has a code other than India's, do not use or convert it. If your DVD does not have a region code on it, it can be played in any country.

Set the Primary language as English.

Select the 'Create subtitle files' if you want to see subtitles in your movie.



Your DivX copy can even have the subtitles

Select the directory where you want to save the output DivX movie. Click on the 'Go for it' button and the process starts. The whole process will take more than 2 hours at the least. Our machine took about 5 hours and 24 minutes to convert a 112-minute DVD. The time taken will depend on the quality you are encoding at (the default is 342x240 pixels at 523 Kb bitrate) and the machine you are using. If you are converting a DVD of around 8 GB, it is always better that you have spare space of at least 10 GB on the particular partition that you are storing the conversion output in.

Now go to the folder you specified for the output, click on the file, and Windows Media Player will play the file for you. Voila! Your own DivX backup is ready for your viewing pleasure. Store it in your hard disk or burn it onto a CD for safe storage.

ANIL PATRICK R.

Downloads for Designer

From design tips to fonts and stock photography, here is a collection of sites that deliver just that... and everything else in-between

Are you an aspiring page or graphics designer but lack the money to set up your own utility-rich studio? If so, you have company. There are many out there who hold the same dreams (small-time magazines included) for whom plunking down a few lakhs for the equipment and its upkeep is a major hurdle. Besides, finding skilled and talented personnel to get the job done right is another painstaking task. The Internet however can be a teeming resource for all those design elements you are seeking. Thousands across the world, all experts in their field of design, regularly contribute to the Web products replete with their diverse talents. Samples of art, photography and fonts are easily available both for commercial use or simply to add to your own collection. Some material can be obtained freely, while others need to be bought and sometimes licensed. We marched through a maze of design sites and have returned to offer you some guidelines that will help you utilise the Internet as a virtual design super-store.

Typography rules

Sometimes, words can illustrate a point with greater emphasis than a picture. Whether it's a title, quote or just plain body text, you need the right typeset, one that perfectly matches up to the tone of the story. Of the many facets of design, it is perhaps easiest to get hold of free fonts. Your search for pretty character faces begins with ***www.fontfreak.com***, a site abounding with thousands of free PC and Mac fonts, dingbats and font control software. It's updated several times a week, with freeware as well as shareware fonts, ensuring that you receive a fresh batch of originally crafted typefaces.

Fontsite.com has a polished look and substance apt for the type and graphics professional. Not only do they offer high-quality typefaces in TrueType and PostScript formats, but FontSite also features a series of informative articles ranging from choosing the right typeface to managing the life of a production artist.

For fonts that go against the grain, check out ***www.acidfonts.com***. You won't find any of the standard fare of Arial and Verdana. Each fortnight, Acidfonts keeps you posted on what's cool as far as fonts are concerned. They even have a section dedicated to the sci-fi genre. Going a step further, ***www.abstractfonts.com*** offers its own share of unconventional characters neatly arranged in categories such as 3D, Cartoon, Celtic and more. Unlike other font sites, Abstract Fonts has an interactive forum where users can help each other in searching for a particular typeset or helping identify the names of some of the more unfamiliar ones.



A treasure trove of royalty-free fonts exists online

If you are scouting the Web for typefaces that have a conservative and professional touch, your best bet would be the International Typeface Corporation, or ***www.itcfonts.com***. In addition to their collection of 1,000 odd fonts, ITC keeps a staff of designers for custom font designing if that is what you're looking for. However, note that ITC Fonts doesn't offer much in terms of free stuff. Most of their products are sold through a wide variety of licensing options.

Those nifty essentials—plugins and filters

To a designer, applications such as QuarkXPress, Adobe PageMaker and Photoshop are the enabling tools for their skills and creativity. But at some point, the standard fare of functions and features tends to taper down the creative ability of a designer. Thankfully, there are hundreds of free (and otherwise) plugins and filters, which can add new facets to a program's functionality. From image filters to conversion utilities, these nifty add-ons often deliver real value to the application and its purpose.

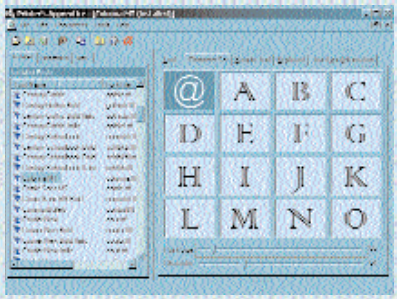
Adobe Photoshop plugins are some of the most easily accessible of all design applications. Head towards ***www.actionxchange.com***. This is a unique community site where you can download and share several easy-to-install

Managing Fonts

Once you've downloaded a massive album of fonts and typefaces, you're going to need some help in keeping them neatly arranged and organised. Printers Apprentice is a comprehensive tool for managing font files on Windows systems. Features include an Explorer-style interface for viewing fonts on your system, the ability to view fonts from any media without installing them, the ability to view character sets and keyboard layouts, batch font install/uninstall, and more. You can print eight different font catalogues and font sample sheets, as well as the entire contents of a disk or CD.

Another useful tool for font management is FontAgent, a font utility for repairing, organising, and maintaining font collections. It quickly finds all fonts and identifies corrupt, duplicate and unmatched fonts. With the click of a button, it moves all the problem fonts into a special folder and organises all the good fonts any way you want: in one folder, in alphabetical sub-folders, and more.

If you're looking for a way to browse through the fonts installed on your computer, there is a freeware solution for you. Fontastic is a font viewer with capabilities that your common font viewer lacks. It gives you the ability to preview fonts using text that you type and not some prepared text such as Aa, Bb or that jaded 'The quick brown fox' text. You can scale a font up to 500 points and easily rotate through the fonts as you wish.



Printer's Apprentice is a power tool for managing font files and type faces

actions, extensions, modules, and more for Adobe Photoshop software.

www.extensis.com is another resource for professionals serious about design. The tools available here are not free—in fact, they cost quite a bit. But one look at these utilities and you might think you are looking at some commercial stand-alone software. Extensis' product line is comprised of plugins for a wide range of page layout and graphics design software such as QuarkXPress and Adobe PageMaker.

Visual appeal

Unlike the Web, just any picture or photograph will not do for offline publishing. As the printing process is extremely sensitive to the resolution of an image, a visual with at least 300 dpi (dots per inch) would be ideal to maintain the quality of the image. There are plenty of sites on the Net that offer attractive, high quality photographs and illustrations. Although earlier many of these image stockpiles were freely available, the downturn of the Internet economy forced a change on their business model, making the seeker bear the burden.

Among the lesser-known image portals is ***www.eyewire.com*** which features stock photography, illustrations, clip art, videos and more. Though their offerings are on the pricier side, the quality justifies purchase.

If you're on the hunt for product shots of consumer electronics, look up the manufacturer's home page and navigate your way to the Press section of the site. If that's not available, the option would be to contact the public relations or marketing departments and ask them for an assortment of images which they are usually happy to provide.

Searching for images

If you're tired of expensive licensing fees for images, there are two other avenues that might have answers for you. The most popular search engines on the Web, Google and Altavista not only catalogue billions of Web pages, but also index images. Using these engines to search for images is quite similar to using them to hunt for Web pages. All you have to do is click the Images tab just above the text box. Once the page is loaded, use the text box to search for images that suit your query. Google, for example, analyses text on a Web page adjacent to the image itself. It also takes into consideration the image caption and other factors to rightly determine the image content.

The drawback? Neither search engine can determine whether the images being displayed are copyrighted material or not. If you see an image that you like and wish to use, open the Web page of the image to verify its exact status. Copyrighted images would require the authorisation of the

Royalty Blues

Sometimes, clarity is hard to find amid all the verbal gymnastics that image repository sites such as Corbis and Imagebank, the leaders in stock photography carry. At first glance, the term 'royalty-free' might appear to suggest that an image is free, with no strings attached. Well, you couldn't be further from the truth. We've elaborated on a few terms and their implications.

What the expression 'royalty-free' really means is you can use such images without having to pay for them on a per-use basis. But to get the images, you have to shell out a one-time fee that can range from tens to hundreds of dollars depending on the photograph and its resolution. Images that are classified under the royalty-free license can be altered and freely used in a wide variety of commercial purposes.

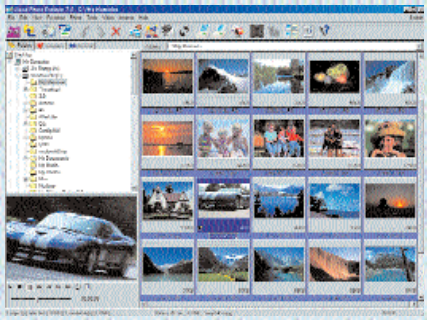
A traditional license requires you to outline how and when you wish to use the images and the fees will be based upon such information. Under this scheme, images are generally used only once, though deals can be arranged for time bound or unlimited usage. Of course, the more control you want over the images, the more you're going to have to pay. You can also request exclusive rights to an image, and although you won't own it, at least you can keep your competitors at bay. Sites such as Gettyimages use a similar method of licensing called 'rights & clearance' wherein a deal is negotiated between the site and the creator of the images on your behalf. Usually, clearance like this is required only in special circumstances outside the realm of ordinary license schemes.

Managing Images

Working with a large collection of images can be a mind-numbing experience to say the least. If a picture is worth a thousand words, then how much justice will a 30-character filename do? Tame those vaguely named images with software that converts, organises and catalogues the album of images on your machine.

If you find it increasingly difficult to remember the name and location of saved files, then try out eGems Collector Pro. One of the most useful features is its ability to store the source of the electronic file in a field it calls 'bibliography'.

ThumbsPlus is a tool used by professionals for image browsing, viewing and organising. It includes some strong image cataloguing features as well as high-end relational database support. It features numerous small yet nifty additions such as



Organise and manipulate digital images and video clips with Ulead Photo Explorer

Auto Clip Save, which automatically saves clipboard content to files, and automatic saving of photo scans.

FotoStation is a more balanced software package, offering impressive image editing features and satisfactory browsing, viewing, and publishing options to professionals and novices. Its powerful text annotation abilities make it an excellent choice if you need to store a great deal of text information with your images.

If you're averse to buying such software, there are a couple of good free options available. PhotoShoot maintains an accurate inventory of all your photos and other image files. You can easily locate a picture by category, subject, photo ID and the date the picture was taken on.

Another more popular free utility is Ulead Photo Explorer, a visual file manager that works with images and multimedia clips. The software allows you to organise and share your digital files quickly. A digital camera wizard lets you upload your pictures quickly too.

owner before you can use them. And even if what you've found is not copyrighted, don't assume that either Google or Altavista provides legal permission for you to use them.

Image searches come equipped with filters that omit mature images and content. Users can easily toggle the filters on and off. But because of the nature of the search, some images might slip through the cracks.





Graphics Design Basics (above) is a good start to absorbing the essentials of graphic design. Photoshop Cafe (left) has its foundation on thousands of users who contribute to the art and cause of everything Photoshop

Designer tips

Aside from resources for designers you can also find expert design tips online. Whether it has to do with the slightly more mundane issue of pagination or advice on how to best exploit your genius, there is a liberal amount of material online to help you.

A sure stop for graphics designers who wish to accentuate their skills by means of a simple, yet meaningful approach through art is ***www.graphicdesignbasics.com***. The site carries numerous articles that bring out some interesting content pertaining to the elements and principles of design including insights on colour, line, texture and more. All this is coupled with an online image gallery that authors contribute and use to illustrate the meaning of each rule.

Loaded with goodies, ***www.photoshopcafe.com*** is one of the most useful resources on the Web for Photoshop users. The site is packed with information, especially for those wanting greater control and flexibility from their software. Tips and tutorials suited for the beginner as well as the advanced user are coupled with downloadable examples so that users can easily take on and use some of the more fancy aspects of Photoshop. An online design gallery features some of the talents behind the site's expert community. And speaking of community, the discussion group maintains a collection of various forums making Photoshop Café one of the most essential bookmarks for anyone who cares to expand their talents.

So here you have it, some of the best and most balanced online resources pertaining to design. From advice to fonts, just about every aspect of design lies a click away. Plenty of pieces to the design puzzle are here, free for the taking, but if it's quality you're looking for, don't shy away from letting your money speak the words of art. After all, it's more affordable than your own studio and let's face it, there's no such thing as a free lunch.

PRASHANT MASRANI

30Minutes Expert

Harmonise that BIOS!

Changing BIOS settings isn't an act for the faint hearted. The BIOS gives users an avenue to change the most basic processes in a PC. It's also one of the most frequented stops when installing hardware. Unfortunately, the whole subject remains as obscure to many today, as it has always been. But with the right understanding, and possibly some tolerance on the side for good measure, you'll be able to tailor your computer to your way of working. Want to change the way your PC loads? Need to install a hard drive? Read on.

Getting through

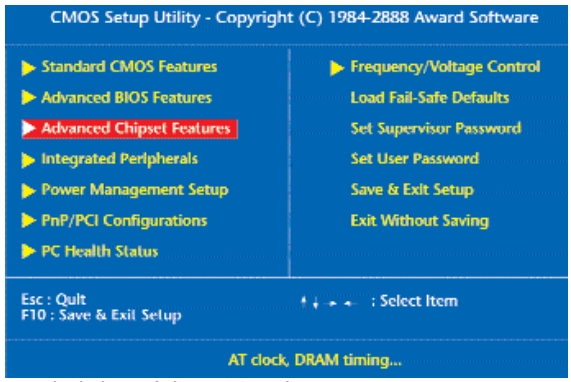
In most PCs, particularly of the assembled variety, simply depress the [F1] or [Delete] key (a directive onscreen usually says which) a brief moment after you power up your computer. Usually, you have only a few seconds to take action, so make sure you're standing by.

■ The **Standard Options** menu offers the simplest level of setup for users. You can access basic settings such as the time and date, and even set up your floppy drive through this menu.

One of the most common problems faced by users has to do with fixed devices. This would include hard drives, CD and DVD drives or any other mass storage drive that is installed in a similar fashion. At times, when the computer's battery is weak or has been changed, the BIOS settings revert back to the default settings, which may or may not comply with your specifications. As a result, hard disk error messages will arise. Drive models that date after 1997 should face no problems at all if you change the drive type to 'Auto'. In case you have a rather dated hard disk attached to the system, it's best to manually enter the drive's details such as sectors, cylinders and so on. You can usually find these settings listed on the hard disk itself.



Commonly experienced problems, such as hard disk errors, can be easily fixed through standard BIOS options



A typical view of the BIOS main menu

■ In the **Advanced BIOS** category, you will be presented with a higher level of control. You can choose to have the booting process start from either a CD-ROM or alternative storage devices such as a Zip drive. Enabling anti-virus protection won't help you much with common viruses as it simply ensures that nothing can be written to the boot sector, a place where only the most dangerous of viruses encroach. With the Internet and its worms and Trojans, this basic level of protection does practically little.

■ **Power Management** helps your PC operate independently of you. There are a number of nifty things you can do by simply tweaking the settings in this area. Putting your computer off to 'sleep' and waking it up later is a clever principle for saving power and loading time. You can specify the exact time and date you want to power up or power down the system.

The key power saving modes are standby and suspend. When the PC goes into standby, the hard drive and monitors are turned off while everything else remains fully operational. The suspend mode completely shuts off the PC except for the CPU, which operates in minimal mode. Newer machines have the benefit of 'Suspend-to-RAM', which saves a snapshot of the current working environment to memory, which can be instantly recalled by a mouse click, or by hitting a key.

An easier way of managing these settings is through Windows itself. If your BIOS is ACPI-compliant, you can enable this option to easily configure through Windows as to how you want your computer to handle power saving issues.

■ **PC Health Status** essentially monitors the thermal condition of your PC. It basically shows a quick status of CPU and system temperature, voltage levels and fan speeds. Some computers come with a facility to set an alarm and turn off the PC in case the temperature exceeds a specified limit. In short, it's a simple way of making sure that nothing goes wrong, and nothing usually does.

■ **Passwords** lets you keep your computer as secure as possible by setting a password at a much lower level than the operating system. BIOSs generally impart two levels of security, one at the user level and the other at a system level.

A user-level password will let you boot up the computer as you normally would with restricted access to the BIOS. It is the system password that grants such authority to open and modify the BIOS. It's a perfect setup for PCs that have a supervisor with multiple users.

PRASHANT MASRANI



Your answer to the most common computer ailments as well as tips on how to increase productivity and enhance the entire computing experience

Like it or not, PC troubleshooting has always been part and parcel of the overall computing experience. A major hurdle with PC troubleshooting in India has been the paucity of professional call centres and guidance from expert solution providers. Even if someone is there to help, the experience can prove to be frustrating, expensive and sometimes of no practical use.

The sheer variety and gamut of peripherals available today means that tracking down the root of the cause is always time-consuming and exasperating. Little wonder then that solutions from most dealers and so-called experts tend to be catastrophic— "you will have to change everything here" or "nothing can be done at all."

The good news is that almost 90 per cent of all PC-related problems are easily solvable and you needn't pick up the screwdriver every time you want to troubleshoot. All you need to apply is a little common sense and track down the source of the problem. Once you've tracked the problem, the solution rarely involves any major system overhaul.

PCs are like individuals with varying characteristics and behavioural patterns. Only those users who really use their PCs can observe the quirks and performance oddities peculiar to their PC. The ability to diagnose these faults takes a little experience (and time) and this is where the Troubleshooting Guide steps in: to help you find easy solutions to common problems as well as long-drawn 'if and then' solutions for complicated and confusing problems. All you need is an open mind and a desire to troubleshoot. Ready?

MODEM & INTERNET

No connection

Q My modem handshakes but it refuses to connect. What could be the problem?

A There can be several reasons for this. The most prominent reason is usually the slow response from the local and remote server. Line noise (disturbance) can also hamper the connection between your modem and the modem used by the ISP.

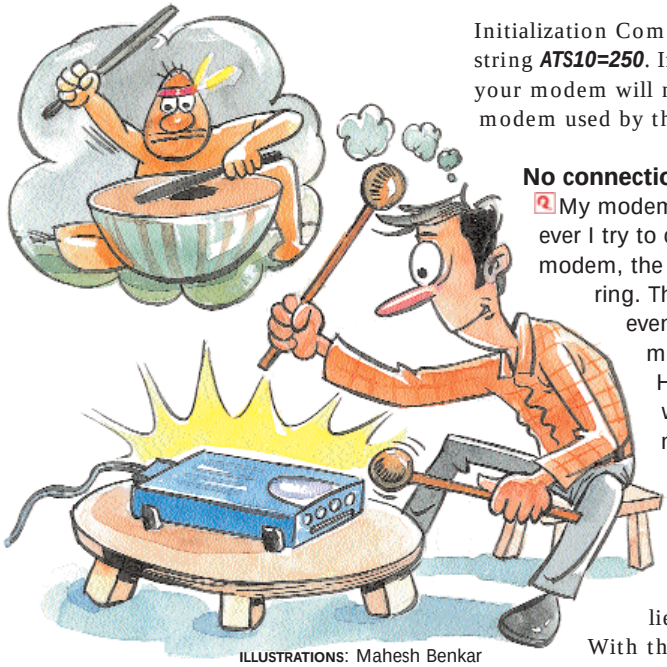
Lower the connecting speeds—this will make you log on to the Net at lower speeds and take care of the problem. To set the modem speeds, go to ***Start > Settings > Control Panel > System > Device Manager***, right-click on Modem and click on Properties. In the window which opens up, click on the Modem tab and under 'Maximum port speed', select the slowest speed (300 bits per second).

Slow transfer rates

Q I have a 33.6 kbps modem but it still has slow transfer rates. How do I fix this?

A Internet speed depends on many factors such as the speed of your modem, the condition of the telephone line and bandwidth provided by the ISP. If you want faster transfer rates, go in for a 56.6 Kbps modem.

Make sure your telephone line is properly wired. If you still feel the rates are not fast enough, then the fault lies with the telephone which is not capable of supporting more than 6 kbps transfer rates. In that case the only alternative left is either a DSL or a cable connection.



ILLUSTRATIONS: Mahesh Benkar

Low download speeds

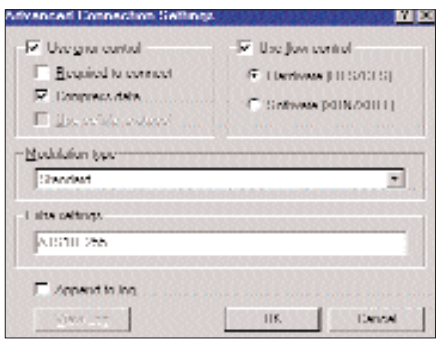
I use 56 Kbps modem yet I get only 2-3 Kbps download speed. Why?

It seems the ISP you have subscribed to offers less bandwidth and yet allows more people to log on. As a result, you get low download speeds. Try changing your ISP.

Connect-reconnect

My modem keeps dropping the line no matter which number I dial. What do I do to stay connected?

The problem could be your telephone itself; get the line checked by a linesman. Putting aside this probability, you could try this setting: go to ***Start > Settings > Control Panel > System > Device Manager***, right-click on Modem and click on Properties. Here click on the Advance tab and empty the field under Extra Initialization Command. Type in the string ***ATS10=250***. If this changes to 255, your modem will never hang even if the modem used by the ISP hangs.



Adding a simple string will fix your connection problems

No connection between modems

My modem works fine but whenever I try to connect to another modem, the only thing it does is ring. The problem persists even after trying many terminal programs. However, my friend who uses the same model does not face any problem. Why is this so?

In this case the error most probably lies in the S0 register. With this register, you define the number of rings before the modem can react. However, if one adds '0' in this register then the modem does not record the connection.

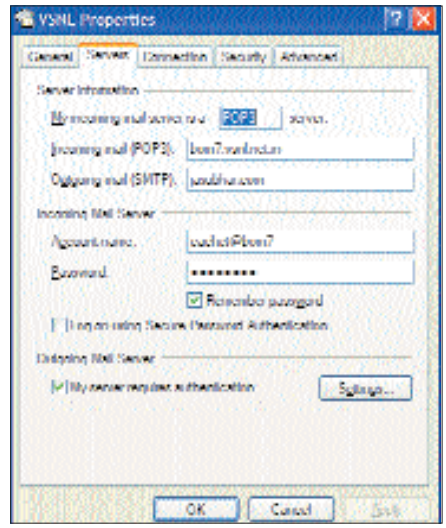
Go to ***Start > Settings > Control Panel > System > Device Manager***, right-click on Modem and click on Properties. Here click on the Advanced tab and in the empty field under Extra Initialization Command, type in the string ***ATS0=6***. If there is any other string already there such as ATS10=250 just continue by adding the above string without any space. This specifies that the call should be received after six rings.

Downloading Web mail to the e-mail client

How do I configure my e-mail client to download my mail?

Your ISP must have provided you the incoming and outgoing server names used to receive and send e-mail. If your ISP is VSNL, for example, then configure the e-mail client as POP3. To do so, in Outlook Express go to ***Tools > Accounts***. There you should add mail, the necessary details, and when you are prompted for the server name, select POP3 and type ***pop.vsnl.com*** or ***bom7.vsnl.net.in*** (depending on the server name allocated to you) for the incoming and ***smtp.vsnl.com*** for the outgoing server.

If you want to download mail from Yahoo!, the incoming server should be put in as ***pop.mail.yahoo.com*** and the outgoing server should be set as ***smtp.mail.yahoo.com***. If you have an account with Hotmail, follow the same procedure for adding an account. Outlook Express will automatically configure the same as an http account and also allow you to download mail from hotmail.



Using your e-mail client to download mails will require the POP3 settings of your ISP

Connecting to another PC through a modem

I use Windows 98. How can I connect via a modem to another person's computer (without connecting to the Internet) and share my files?

You will have to install Dialup Server Utility on one of the machines. You will have to configure this by setting the default server type as ***PPP: Internet, Windows NT Server, Windows 98***. If you want you can assign a password. Install the TCP/IP on both the machines and assign a static IP address to Dial-up adapters.

To share files you will have to install 'File and Print Sharing for Microsoft Networks' on both machines. All these components can be installed and configured from ***Start > Settings > Control Panel > Network***.

Once this is set up, you will have to create a dial-up connection from your machine. In the TCP/IP settings put the IP address of the server you are connecting from. If access password is assigned, enable Require Encrypted Password. You can provide a password in the Connection dialog box itself or you will be prompted for it once you are connected. To be able to browse the remote machine from Windows Explorer, click on 'Map network drive' from the Tools Menu. In the path

field, type the IP address as the machine name and the shared resource as a UNC.

Enabling auto complete

Q I use Windows 98 and IE to browse the Net. I shut off the auto complete feature by mistake and would like to enable it again.

A In order to enable the auto complete feature in Internet Explorer, go to ***Tools > Internet Options > Content***. Here, click on the Auto Complete button and enable the options. You will also be prompted to key in user name and password.

HARD DISKS

Hard disk capacity shows less

Q I have recently purchased a 15.3 GB hard disk but my system does not display it as 15.3 GB. Has my dealer cheated me?

A No, your dealer has not cheated you. But your system is not lying either because 1 GB is equivalent to 1024 MB (raw, unformatted). Also, when you format your hard disk and install your operating system, the file allocation that is done is such that it always puts some blank space before placing data for another file. As a result, the blank space is considered as having been utilised and hence, the actual size of a hard disk would always be lesser after you've formatted it.

Setting multiple primary partitions

Q I want to have multiple primary partitions, one per operating system. Is there is any utility which will ask me which OS to use at boot time?

A You can do this with a utility called Boot Manager. This utility inserts itself into the beginning of the boot process, sets up a special boot manager partition and then makes itself the active partition. When you boot up the PC, the code in this partition runs. It analyses the primary partitions on the disk and then presents a menu and asks which operating system you want to use. It marks the one you select as active, and then continues the boot process from there.

System Commander 7 and BootIt Direct are some other boot managers that can handle this task efficiently.

BIOS shows less hard disk capacity

Q The BIOS detects the hard disk drive but does not recognise the actual capacity. Why is it so?

A It's quite frustrating to find that not all of your hard disk is actually accessible, especially when you are trying to add a new hard disk to an older system. This is almost always due to the BIOS not properly recognising the hard disk structures and access routines. This problem can be rectified by upgrading the BIOS or by using third-party disk managers. In some cases, these problems are due to actual hardware or software bugs that are not detected until hard disks grow in size beyond a certain point.

Check documentation to see if your motherboard supports LBA mode. This allows recognition of hard drive sizes greater than 528 MB. If LBA mode is not supported, the system will only recognise a maximum 528 MB, regardless of how large the hard drive is.

> "The BIOS on older motherboards have problems detecting high capacity drives"

Non-LBA systems require a driver to be loaded to overcome the 528 MB barrier. Most large hard drives come with a driver disk and instructions for loading it, or have the driver already installed on the drive. Driver procedures vary, but generally the driver will load before DOS or Windows, enabling the system to see more than a 528 MB drive. The same goes for systems in which the BIOS recognises a maximum of 8.4 GB even in LBA mode.

Damned by DMA

Q After enabling the DMA for my hard disk drive, I can't boot Windows in the normal mode, get too many errors, and also cannot uncheck the DMA option in the safe mode. How do I uncheck the DMA option?

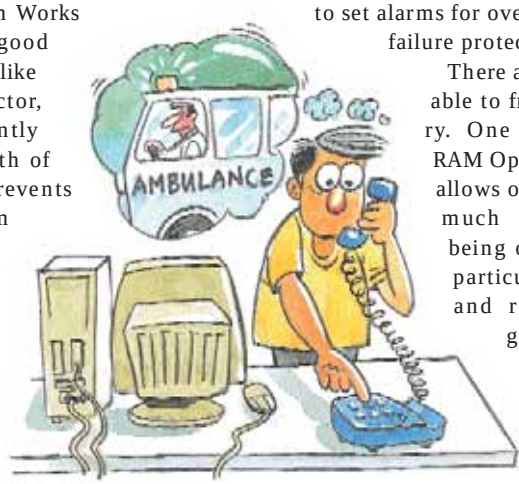
A Booting into safe mode is usually the fail-safe method for changing settings back to the default. If you cannot deselect the option in safe mode, go to the page in the CMOS Setup that sets the operating parameters for your hard drive and temporarily disable the DMA mode. Run Windows in Normal mode and everything will operate normally, although disk performance will be reduced.

After starting Windows in the Normal mode, deselect the DMA option that you had enabled initially.

Getting Help

There are plenty of tools that can check and ensure that your PC gives you trouble-free performance. For example, Norton System Works 2002 provides good diagnostic utilities like Norton Disk Doctor, which constantly monitors the health of your hard disk, prevents deletion of system files and fixes registry errors, and has a special disk defragmenting utility to speed up your machine.

Tools like motherboard monitor (***mbm.livewiredev.com***) display your motherboard temperature and the internal fan speeds, and even allow you to set alarms for overheat and fan failure protection.



There are tools available to free up memory. One such tool is RAM Optimizer which allows one to see how much memory is being occupied by a particular program, and root out programs that are no longer being used but still occupy RAM.

Invisible data

Q I have two hard drives, one is a 20 GB drive and the other is 40 GB. I had to transfer some of my files on to my friend's PC for which I detached my 40-GB drive and took it to his place. After transferring the files, I fixed it back on my machine. The problem is that now the drive fails to show any of my data in Windows environment but while booting, the boot-up screen shows that the hard drive is being detected. What could be the problem?

A It seems your FAT table has been corrupted. As a result, in spite of your hard disk being detected in the BIOS, it fails to show any data on the PC. You should try to recover the data by using reliable data recovery software. (Refer to the February issue of Digit for the story, Surviving a Hard Disk Crash)

> "Older graphics cards do not comply with the latest versions of the OpenGL and DirectX API"

FLOPPY DRIVE

No read-write floppy drive

Q I use Windows 98. My floppy drive does not read or write to floppy disks. What could be the reason and how do I solve this problem?

A This is a very common problem with floppy disks. The troubleshooting technique is as follows:

Start by checking the floppy, as this is the first point from where the problems begin. You could try changing diskettes a few times unless you are sure that the floppy disks are not faulty. Try a properly formatted diskette in your suspect drive. A faulty disk can generate some very inconsistent read and write problems.

Try cleaning the floppy drive next. Clean the read/write heads thoroughly. There are head cleaning disks available in the market that do a decent job of cleaning the drive. However, make sure that you do not run the drive with a head-cleaning disk inserted for more than 30 seconds at a time, or you could damage the heads with excessive friction.

Your next suspect should be the signal cable. Make sure that the drive's 34-pin ribbon cable is attached securely at the drive and at the drive controller. Try re-attaching the signal cable if it is loose, or rather, try another signal cable to be sure that the cable is not the problem.

Finally, you could try replacing the floppy drive. If the problem persists, chances are that the floppy drive is defective. It could be that the head read/write system has failed. Try replacing the floppy drive with an optimal drive from another system to check if this is the problem.

If changing the floppy drive too does not resolve the problem, you may have a defective floppy drive controller circuit. If this is the case, you may also receive a floppy drive or controller error from the system BIOS while booting. Disabling the existing floppy controller and installing an expansion card controller can solve this; the floppy controller portion is left enabled.

Floppy drive LED stays on

Q I recently upgraded my system. Ever since, as soon as I boot my PC, the floppy drive LED stays on. Is this some kind of a virus?

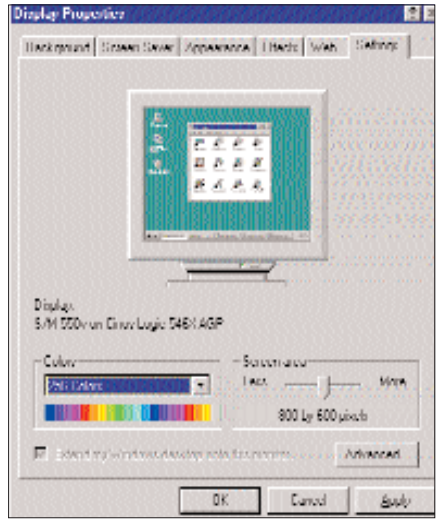
A No, this is not a virus. The problem here is that one end of the drive cable has been inserted backwards. Open the CPU case and make sure that pin 1 on the 34-pin cable is aligned properly with the connector on both the drive and controller. This usually solves the problem in most of the cases. The failure of the drive controller can also cause this problem, although this is somewhat rare.

GRAPHICS CARD

Only 256 colours displayed by systems

Q My system is unable to display more than 256 colours. How do I get it to display more colours?

A First, for your system to display more than 256 colours, you should have at least a 1 MB graphics card. In today's time, a 4 MB graphics card is the lowest configuration card available in the market. Hence, we suspect you are facing a driver problem. Either you've removed or installed incorrect drivers. In case you have upgraded your operating system from Windows 98 to Windows 2000, you will need to load the set of drivers specially developed for this OS. You can install the drivers from the diskette that came with the graphics card or download these drivers straight from the developer's Web site. Once you have installed the appropriate drivers, you will automatically get an option of 16, 24 or 32-bit, depending upon the type of graphics card you use. Now your graphics card will be able to display more colours.



Adjust your colour settings for proper display

16 MB card shows as 8 MB

Q I have a 16 MB TNT2 graphics card but my system shows it as an 8-MB card. Why?

A The RAM on your card may not be functioning properly, hence it would be better if you sent it back to the dealer for testing. However, before you send it, open the PC and remove the graphics card and check if rust or dust has affected the chips. Clean the chips gently and then reinsert the card. Now start your machine and if it still shows as 8 MB on boot up, then you will have to replace your card.

Monitor goes on the blink when playing games

Q I have a Trident 9750 3D accelerator graphics card. However, whenever I try to play games such as *Quake III* or *Need for Speed*, my monitor automatically goes in

standby mode—I can't see anything but I can hear sounds pretty well. Sometimes I get a '3D device error' too. Has my graphics card gone kaput?

A The AGP card that you have is a very low-end 3D-accelerator. Apart from providing basic 3D acceleration, there isn't much else that this card can do for advanced games such as *Need for Speed* and *Quake III*, which incorporate fog effects, specular and dynamic lightning, and tri-linear filtering. Additionally, new graphical programs also use Open GL and other standards, which require much more power in the graphics processor. Hence, this card will allow you to play only very low-end 3D games. If you'd like to play high-end games, buy a graphics card like the GeForce2 or the GeForce3.

Blank screen when playing 3D games

Q While playing 3D games, the screen suddenly goes blank while I am playing. Sometimes my PC hangs when I close the game and return to my desktop. Why does this happen?

A Check to see if the graphics card is being sufficiently cooled. Make sure that there are no loose wires or a cable obstructing the fan on the graphics processor. Remove any dust/grime from the fan. You could try to reduce the quality and resolution settings in the game/Windows environment (display properties). The problem could also be because of incorrect/outdated drivers. See that you are running the latest drivers.

Another reason could be that the motherboard is not able to supply sufficient/correct voltage to the AGP port. In which case, you will have to replace the motherboard.

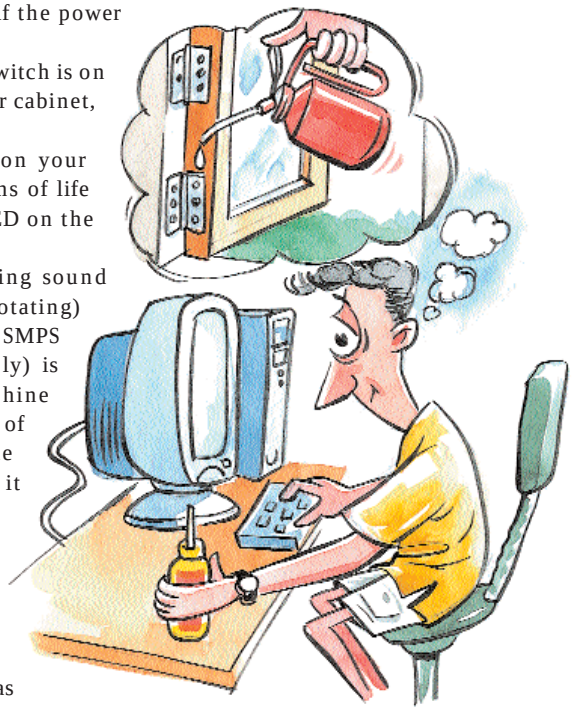
Detonator drivers

Q What are Detonator drivers and what kind of graphics cards are they meant for?

A These drivers are for nVidia graphics processors only. They go hand in hand with DirectX drivers of version 6 and above. These drivers increase the graphics card's performance. Some of the Detonator's features include DVD and HDTV playback, advanced Digital Vibrance Control (DVC) user interface for products that support DVC, and improved FSAA control panels. It also

'My System won't Boot, What do I do?'

No POST (Power On Self Test)



- First and foremost check if the power cable is properly fitted.
- Then check if the toggle switch is on (found behind the computer cabinet, SMPS).
- After this try switching on your machine and check for signs of life (lighting up of the Power LED on the front panel).
- If you can hear a whirring sound (fans and the hard drive rotating) then it means that the SMPS (Switch Mode Power Supply) is fine. If not and the machine sounds dead with no signs of power then try replacing the power cord, otherwise it means that the SMPS is dead.
- If the machine shows signs of power and still does not POST then either some PCI device has come loose or some component has failed.
- You can investigate the problem further if your BIOS emits a peculiar beep code. The following is a common list of beep codes for the popular Award BIOS:

1. One long beep: Memory problem
2. One long, then two short beeps: Video error
3. One long, then three short beeps: Video error
4. Continuous beeping: Memory problem
5. Alternating high-low beeps: CPU not working

POSTs, but hangs too

If1 the system POSTs but hangs on the POST screen, check for the following:

- Bad memory timings in the BIOS or bad RAM. Try changing RAM slots and the RAM module. Revert to default settings in the BIOS.
- Corrupt BIOS (if the POST screen becomes garbled). You will have to change the BIOS EPROM chip.
- Processor is overclocked. Check in the BIOS for the processor and frequency settings. If you are not sure then you can revert to default settings for the BIOS

General guidelines

While it is almost impossible to pin down to a specific problem and a specific solution, there are broad guidelines that you can follow while troubleshooting:

- Boot into Windows using the step-by-step confirmation method if you are using Windows 9x.
- Go through your BIOS settings, and turn everything at the default settings.
- Remove all PCI cards, even the sound-card and try booting only with the video card, hard drive, floppy drive and CD-ROM installed. You then add one card at a time, until the boot problem shows up.
- Long boot times suggest that Windows is most probably trying to resolve an IRQ conflict. You can manually assign IRQs to the PCI slots from the BIOS but do this as a last resort as this can sometimes cause more trouble.
- Try booting into safe mode—if you can, then it's most probably a conflict or a driver-related issue.
- Try uninstalling the last driver you installed or perform a system restore. All versions of Windows after 98 have some form of system restore utility—Windows XP has the best, of course. Try creating as many system restore points when your system is working fine.

features an easy-to-use antialiasing control user interface, and optimisations for Intel i815 and Pentium 4 processors and AMD Duron and Athlon processors. You can download them from ***www.nvidia.com/Products.nsf/htmlmedia/software_drivers.html***.

Continuous beep on power up

I assembled a PC on my own, but whenever I power it up, I get a strange continuous beep and nothing shows on the monitor. Please explain why this happens.

> "Accumulation of dust on the lens in the CD drive is the primary cause of read errors"

Your video card is not fitted in right. Make sure the card connectors are snugly fitted in the respective slots, and see to it that the RAM and the processor are properly seated.

Linux incompatible

My graphics card doesn't work in Linux. How can I fix this?

Make sure that your graphics card is supported under Linux, and that X-Windows is configured properly (just type ***setup*** in the console). If your graphics card is not supported, you should download the latest Xfree86-SVGA file, which is available at ***ftp://rpmfind.net/linux/caldera/LTP/col/install/RPMS/XFree86-SVGA-3.3.6-6.i386.rpm***.

The latest version has support for most of the cards. However, if you find that your card is supported under Linux and it is still not detected, it means that you have not configured your X-Windows operating system properly. To do so, log in as root and at the terminal type ***setup*** and press [Enter]. Go to X configuration and press [Enter]. The Linux OS will either detect your card or ask you to configure it. If it does not detect your card, you can choose Custom. Now you would need to know your monitor's refresh rates, which can be obtained from the monitor's manual. If you can't determine the refresh rate, use a refresh rate of 60 Hz, which is supported by most monitors. Then, using a trial-and-error method you can find the best resolution for your PC.

Need for Speed doesn't work in Windows XP

I love playing racing simulations and have the entire *Need for Speed* series (2, 3, 4, 5) on CDs. But my problem is that none of my games work with Windows XP. What's the problem?

The *Need for Speed* series does not natively support the Windows 2000/XP environment. But you can try using the program compatibility mode offered in Windows XP (right-click the Program file, go to Properties, and select Compatibility) and run the games in Windows 98 mode. Now your games should work fine.

CD-ROM / DVD / CD-RW DRIVES

Long time detecting CD-ROM at startup

My computer takes a very long time searching for the CD-ROM during startup. How can I avoid this?

You will have to make a few changes to your CMOS in order to solve this problem. Press 'Del' on startup; it will lead you to the CMOS. Choose the Standard CMOS option and select 'Auto Detect Hard Disk' and check whether the CD-ROM is set as slave to your hard drive. Now set the 'Primary Slave' option on 'Auto'. With the exception of hard disk and CD-ROM drive, set all other options of IDE device to none. Now save the configuration and exit by returning to the main setup.

CD tray behaves erratically

I experience a strange problem. Whenever I insert a CD in the CD tray, the CD tray comes out automatically after a while. Sometimes, it refuses to eject, while other times it refuses to go in. Please help me fix this erratic behaviour.

This behaviour is often caused by dirty sense switch contacts or bad connections in the CD drive. Other reasons could be worn out or stretched belt of the drive, poor or gummed up lubrication, defective motor or bad connections to the motor, stripped gear or other mechanical damage, defective micro-controller or other logic circuitry. Chances are that none of these problems can be fixed by you, nor are they easy to diagnose. Your best bet would be to get the drive and the system serviced/checked by an authorised service engineer.

A slow CD-ROM drive

When I insert a disk in my CD-ROM drive, the operations take too long to complete. For example, Windows Explorer takes a long time to show the contents of the disk. Sometimes, this simply fails and I end up rebooting the PC. Please help me fix this problem.

If this problem occurs only with a single disk, chances are that this disk is dirty, scratched, or defective. If this problem occurs with most of the disks, then you could try cleaning the drive first, which could be dirty or have a damaged objective lens. If these two suggestions don't fix the problem, then there's a serious problem with the drive, such as a faulty sled motor or drive IC, faulty control logic, bad cables, faulty tracking or CLV servo, or an engaged transportation lock. In this case you will have to get the drive checked by a technician.

CDs don't autorun

My CDs do not autorun in my PC. However, the same CD autoruns on my friend's machine. How do I fix this?

The problem occurs if there is an incorrect entry in the registry. Be careful while editing the registry, it's advisable to make a backup first. Go to ***Start > Run***, type ***regedit***, and click OK. Navigate to the following key: HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer and modify the binary value for the NoDriveTypeAutoRun key to ***0000 95 00 00 00***. This should take care of the problem.

Poor DVD playbacks

I have a problem with performance issues while playing DVDs on my DVD drive. The most common problem is a poor playback while playing any movie—even though the DVDs are of fine quality. Apart from this, I frequently come across

error messages when using the drive. What is the problem?

A The problem does not lie in the drive. Actually, this is a problem faced by many DVD drive users. Your first move should be to check whether you have the right and/or the latest drivers. Driver problems are the major cause of all playback-related issues—freezing screens while playing DVDs, poor sound, error messages, and so on. You will usually find the latest drivers on the Web site of the manufacturer of your drive. At the same time, also make sure that you have the right drivers for your graphics adapter and DVD decoder.

Next, you should check if the DMA or Sync Data Transfer box is checked in Windows. Go to ***Start > Settings > Control Panel > System > Device Manager***. Here, choose CD-ROM, click on Driver Properties, and choose the Settings tab. Make sure the appropriate box is checked, depending on whether it's an IDE drive or a SCSI drive. If you face any problem (which generally happens when you use an AMD processor or a VIA chipset) uncheck the DMA option and restart.

Finally, you could try a few basic tips while playing DVDs that are known to help:

Close any unwanted programs that are running in the background. Allocate more memory to the DVD player, if there is an option for the same. SCSI DVD-ROM drives should either be the first or last device in the SCSI chain with appropriate terminations.

If you are viewing the DVD on a TV, the problems could also be due to a long cable or poor contrast settings.

Cannot play copy-protected files

Q I recently copied a movie file from a DVD to my hard disk drive. Now I have the essential software to play it, but when I tried to play it, I got an error message saying, "Cannot play copy-protected files." What's wrong?

A DVDs store DVD video as a .VOB file, which is essentially a specialised MPEG-2 file. Most MPEG-2 decoders and players can play them. However, all movies on a DVD are encrypted with CSS copy protection. This is an encryption technique, with the corresponding decryption keys being stored in the normally inaccessible lead-in area of the disc. If you copy the contents of an encrypted DVD to a hard drive, these keys are not, or rather, cannot be copied. So when you try to play the VOB file, the software decoder tries to request the keys from the DVD-ROM drive, which fails, and then shows the error message.

> "Eliminate buffer underruns by experimenting with lower burn- speed settings"

Buffer under-run error when burning CDs

Q When I try to write to my CD-R using my CD-Writer, I get a buffer under-run error. Please tell me what this means and how it can be solved.

A A CD-RW requires an uninterrupted data stream from the hard drive to write successfully to a CD. A buffer under-run message appears when the data stream is interrupted. This may also occur if another program interrupts the writing process or if your writer's write speed is set too high. To solve the problem, there are a few things you could try out:

Try recording at a lower speed. Make sure that no other program is running which could possibly interfere with your CD-writing process. Examples of such programs are usually fax and e-mail programs, screensavers, etc. Close or disable any such programs. Also turn off the power saving features of the PC. You can also indulge in some tweaking up and basic maintenance of your PC. This should include regular scanning and defragmenting of the hard disk, as well as cleaning files and folders in the Windows temp folder that you do not require often. These simple tips usually do the trick and fix the problem.

Recording more than the stated disc capacity

Q Most CD-Rs allow a recording time of some 74 minutes. I have been told that it is possible to record more than this time. Is it true? If yes, how can I record more than the stated disc capacity?

A CD-Rs allow enough space to hold at least 74 minutes of CD-DA audio CD format. The format defines the number of tracks on the disc which contain digital audio data and error correction routines that save sound from minor data loss. The format allows for a total of 74 minutes of digital sound to be transferred at a rate of 150 kilobytes per second (KBps) and 90 seconds of digital silence. The silent area, called the 'lead-out', is included so that a CD player

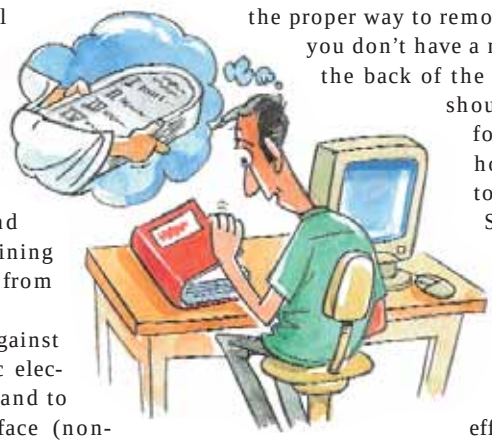
Before you Open your Cabinet

Make sure you do all this before baring your computer:

■ Unplug all power sources and remove all power cables from the mains and from your SMPS.

■ Unplug all peripherals from the computer and make sure no remaining cable is left hanging from the PC.

■ To safeguard against damage from static electricity touch your hand to another metal surface (non-powder coated surface of the computer cabinet will also suffice).



■ Check your computer's manual, for the proper way to remove your case. If you don't have a manual, look at the back of the computer. You should see about four-six screws holding the case to the frame. Simply remove the screws. The cover should slide off the computer easily with little effort.

realises that it has reached the end of the disc.

Your recording software does not include the area reserved for the lead-out when it tells you the capacity of the disk. Thus data can be burnt on the reserved area, and possibly into a few blocks past the end of it. This is referred to as 'overburning' a disc. Overburning again would depend on factors such as the CD-R disk and the writer unit. If a writer isn't able to overburn, it will usually reject the cue sheet before writing begins.

To overburn a CD you need to use software that will not refuse to exceed the disc capacity. For example, CDRWIN warns you that the write may fail, but will allow you to continue anyway. Nero offers the option, under Expert Features, called 'Enable oversize disc', which allows for longer write.

Be warned that overburning can cause write errors. Depending on the disc and your player, the disc surface past the end of the area reserved for the lead-out may be unreliable and you may have trouble seeking out your tracks near the end of the disc.

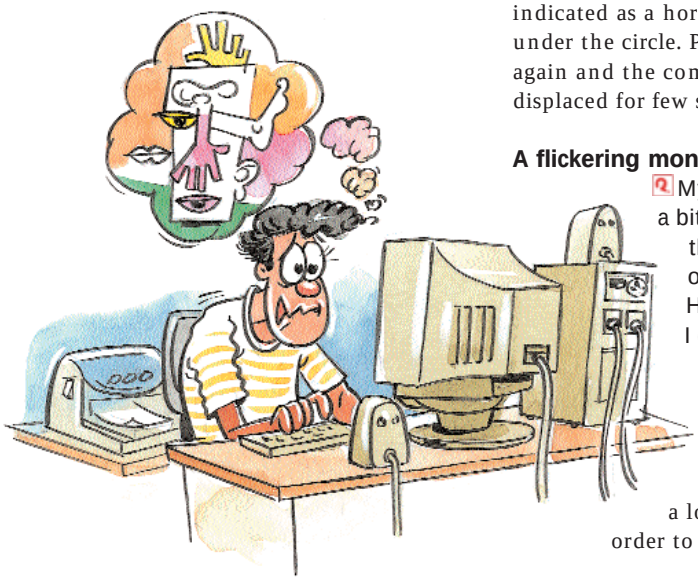
RAM

System does not detect new RAM module

Q I recently installed a new RAM module but my system refuses to detect it. What could be the problem?

A There are two reasons for such an incident to occur. The newly installed memory module may not have been correctly placed in the memory bank in the first case. In such a situation, the computer will report a relevant error message in the form of a beep. To fix this you will have to open the computer and reinsert the RAM in a different slot.

However, on restarting, if the RAM is still not detected, chances are that the RAM might be defective. Try using the same RAM on your friend's machine and if the result is still the same, then you should ask your dealer to replace it with a new RAM module.



Installing different RAM modules

Q I have a motherboard that supports PC 133 MHz RAM. However, one of the RAM modules is PC 133 MHz and the other is PC 100 MHz RAM. Can I install them together and will it work fine?

A If your CPU is running at 133 MHz then by default both your RAM modules will be forced to run at 133 MHz inspite of one being a 100 MHz module. Now whether the latter can take the extra load depends on its type and quality.

MONITORS

A distorted display

Q My monitor looks slightly distorted or appears in a single-edge colour. How do I fix it?

A If your screen has developed scattered spots of discolouration then you will have to make use of the degauss function which will cleanse the build up of stray magnetic fields on your monitor. To degauss your monitor, press the menu button on your monitor and get to the degauss function, which is indicated as a horseshoe magnet crossed under the circle. Press the menu button again and the complete screen will get displaced for few seconds.

A flickering monitor

Q My monitor flickers quite a bit when I try to increase the refresh rate (it only offers a setting of 60 Hz). What can I do?

A There is nothing wrong with your monitor. The flickering is caused due to a low refresh rate. In order to prevent the flickering, your monitor should be set at a refresh rate of at least 75 Hz. You will be able to adjust the refresh rate depending upon the limitation of the monitor and the graphics card. Sometimes, when Windows does not find the right monitor drivers, it installs the default monitor drivers because of which you may not be able to push further a particular refresh rate. Therefore, first try and install the right drivers for your monitor and see whether you can increase the refresh rate. If you still can't, then try running at a lower resolution.



Select the right resolution for a flicker-free display

SPEAKERS

A sound problem in XP

Q I have a system running on Pentium III 700 MHz with 256 MB SDRAM on an ASUS CUSL2 motherboard. My graphics card is a GeForce-2 MX400 with 32 MB RAM. I have a four-channel soundcard based on the CMI8378 chipset and a 4.1 speaker system. I am running Windows 98 SE. All was fine until recently when I upgraded to Windows XP Professional. Now the rear channels of my speakers fail to give any output when I am running XP but when I switch back to Windows 98 SE, they work fine. What could be the problem?

A The drivers that you are using are meant for Windows 98 and not Windows XP and as a result you are facing this problem.

You can download the appropriate drivers for the CMI chipset from ***www.pcdrivers.com***.

Irqued by IRQ

What's an IRQ?

Most hardware devices on your computer need attention from the processor on a fairly regular basis and the mechanism for doing this is called Interrupt Requests (IRQs), which are dedicated hardware channels over which devices can send interrupt signals to the CPU.

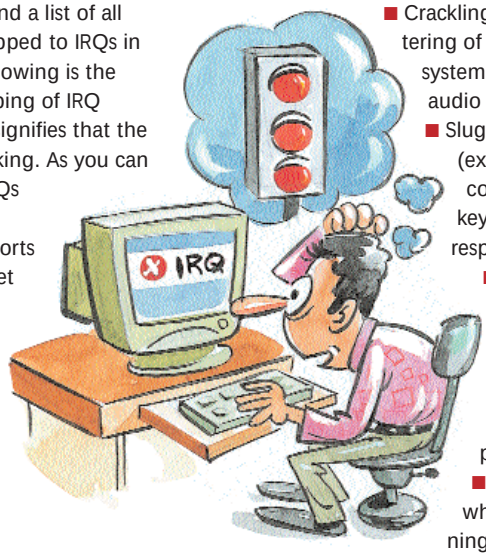
The sad part is that there are only 16 of them, and some of them are reserved for specific devices. This means devices will have to share IRQs and sharing can be a real problem if your hardware doesn't want it to share it with another.

Common IRQ assignments

Go to the System Information tool in Accessories. Proceed to ***Hardware Resources > IRQs*** and you shall find a list of all hardware that is mapped to IRQs in your system. The following is the most common mapping of IRQ assignments. Open signifies that the IRQ is free for the taking. As you can see, there are five IRQs free. Disabling the COM2 and COM1 ports from the BIOS will get you two more!

1. System Timer
2. Keyboard
3. Open
4. COM port 2
5. COM port 1
6. Open
7. Floppy
8. Parallel Port 1
9. Real Time Clock
10. Open
11. Open
12. Open
13. PS/2 Mouse
14. Math Coprocessor/FPU
15. IDE controller 1
16. IDE controller 2

Intelligently reallocating valuable IRQs to the needy will solve 90 per cent of all conflict-related problems.



Common symptoms of IRQ conflicts

- Modem won't echo commands back to the screen or simply won't work
- Hard lockups and system freezes
- Frequent data corruption while transferring data
- Crackling, skipping or stuttering of audio playback; system freezes when audio playback is initiated
- Sluggish I/O response (extremely slow input command cycles and keyboard/ mouse response on screen)
- Windows boots only in Safe mode
- Mouse freezes randomly
- Garbled or incomplete printing
- Lockups or freezes while starting or running games

Troubleshooting IRQ conflicts

- Keep the first PCI slot free as it generally shares an IRQ with the AGP slot. Graphics cards are notoriously bad at sharing resources and will usually hog the IRQ.
- Swap devices around on the motherboard. If device A and B are conflicting then change device A with device C. This is time consuming, since you have to uninstall/reinstall drivers.
- If all else fails, the only way out is to remove a device that you don't use or could do without. Alternatively, exchange it for a different model with different resource requirements.
- Windows 98 SE handles IRQ sharing much better than Windows 98. Also Windows 2000 and Windows XP handle resource allocation completely differently from previous Windows versions and probably have the best chance of getting your combination of hardware to work. The advantage they have is that they simply refuse to install on detecting conflicting devices.
- It is always a good idea to free up as many unused resources in the system as possible before you start trying to resolve a conflict. You should be able to disable allocation of resources such as IRQs to COM ports, USB ports and Printer ports (LPT) in the BIOS if you do not use them.
- Refer to your motherboard manual for IRQ assignments for specific PCI slots. You will find that certain PCI slots will share IRQs irrespective of the component installed. Avoid installing problem devices in these slots.

PRINTERS

Printer shows 'out of memory'

Q My LaserJet printer has suddenly started giving me an error saying, "out of memory." What could be the problem?

A There could be many reasons for receiving this error. Each printer has a distinct set of printer drivers which instruct on how the task is to be handled. This particular driver may have been changed or swapped or the settings might have been changed.

Some of these devices require the user to specify the amount of RAM available. Hence, check the settings for the printer. Go to ***Start > Settings > Printers***, right-click on Printer Driver and go to Properties. There you will be able to see this option. The setting here should match the rated setting of the printer. If this is not a problem, then it may be that the printer spools all tasks to the hard disk before printing any task and over a period of time your hard disk may have become clogged with all this data, leaving you with no space to spool the task. This can be fixed by clearing some space from your hard drive.

There's another remote possibility: the memory chips might have become loose or perhaps been damaged. In that case, you need to contact a technician to get the problem solved.

Prints garbled text

Q My printer prints garbled text. What could be the problem?

A There could be two reasons for such behaviour: either the drivers you installed are not correct or are corrupt, or there could be a fault in the printer head such as worn out pins or badly rotating pin cushion rollers. If the problem doesn't disappear even after reinstalling the drivers, call a technician for help.

Error writing to LPT1

Q Whenever I try to print documents, I get a message saying, "Error writing to LPT1". What do I do?

A This is a very common error and there are quite a few ways to fix it. First, make sure that the printer is online and that there is sufficient paper loaded in the trays. Then clear the printer's

memory by turning off the printer and check whether the printer cable is properly connected. If you still get the error, remove the printer drivers by going to Add/Remove Programs and reinstall them. If you still can't print, then check the parallel port settings by right-clicking My Computer and selecting Properties. Go to Device Manager, double-click 'Ports (COM and LPT)' and further double-click 'Printer Port (LPT1)'. Select the Resources tab and check the 'Conflicting device list' box for an IRQ (Interrupt Request line) or DMA (direct memory access, a fast link to your computer's RAM) conflict. If another device is using the printer port's IRQ, disable that device or assign it a new IRQ. To disable the device, locate it in Device Manager, open its Properties dialog box, select the General tab, and check 'Disable in this hardware profile'. To look for a DMA conflict, first check whether your printer port is configured as an ECP port (the latest parallel port technology designed to speed up printing by using a DMA; older settings are Standard, Bi-directional, and EPP). If yours does support ECP, assign the



Your printer refuses to print

parallel port to an unused DMA, usually done in the PC's CMOS setup program. If your printer doesn't support ECP, configure the parallel port to a slower, compatible setting. The next-best option is EPP. If your printer doesn't support that either, go with Standard—the slowest, yet the most compatible setting.

WINDOWS 9x

Fatal exception errors when restarting Windows 98

I have Windows 98 and I keep getting fatal exception errors while restarting. The error looks something like this: "Fatal Exception OE occurred at 015:BFF712B. The current application will be terminated. Press Ctrl + Alt + Del." My machine then automatically restarts in Safe mode and I can't do anything. Help me.

It seems one of the critical files have been corrupted and this error message is a result of that, as well as the reason why your machine automatically boots in safe mode. To solve this problem, simply reinstall Windows.

Incomplete defragmentation in Windows 98

I use Windows 98 but am unable to defragment my hard disk completely. As soon as it reaches 10 per cent, it begins restarting the program. What can I do?

This is a common problem faced by most Windows 98 users and it usually occurs when some program is running in the background. In order to completely defragment your hard drive, boot in Safe mode and run the defragment program.

Windows protection error

Whenever I boot my PC I get an error saying, "Windows Protection Error while Initialising Device." Restarting or reinstalling does not help.

You might have installed incorrect drivers for one of the devices of your system, or the drivers might have been corrupted. You can boot in Safe mode and remove the device. If you cannot boot in Safe mode, you will have to remove and reinstall Windows.

System hangs on shutdown

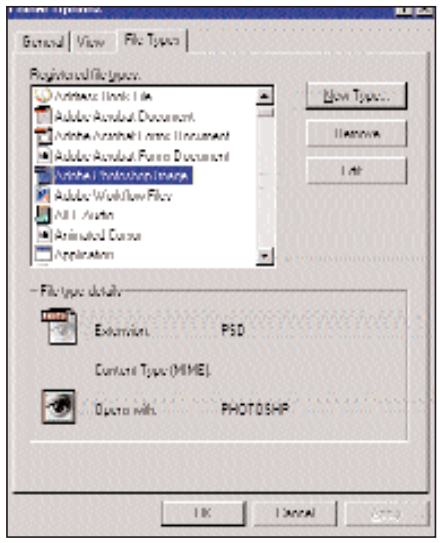
I use Windows 98. Often when I shut down the system, it hangs leaving me with a blank screen and a flashing cursor.

This problem occurs because the 'Disable fast shutdown' option is unchecked. To enable this option, go to ***Start > Run*** and type ***msconfig***; press [Enter]. Then select the Advanced button and check 'Disable Fast Shutdown'. This will solve your problem.

Associating applications with file type

How do I associate the original application with a given file type?

To associate an original application with its file type you should go to Windows Explorer and choose ***Tools > Folder Options > File Types*** to display all the registered file types. To change an application launched with these file types, select the file type, say, GIF, HTML or JPEG, and choose Edit. In the Edit file type box, manually type in the name and the path of the application you wish to launch with the file type you have chosen. In this manner you



Associate the right file extension with the program

can change the file association with any application.

Backing up the registry

How do I backup my registry?

It's quite easy to back up the Windows 95/98/Me registry. Open the Registry Editor by typing ***Regedit*** in the Run dialog box under the Start menu. Click on the Registry menu, and select Export Registry File. Verify the following items in the Export Registry File dialog box:

Save in: Desktop (for example)
File name: Registry Backup
Save as type: Registration Files
Export range: All

Click Save and Exit the Registry Editor. Check that an icon labelled 'Registry Backup.reg' is on the desktop.

Once you have made a backup of the registry, you can make whatever edits you had set out to do. It is always advisable to make one edit at a time since it is easier to rectify.

If the change you made works fine then delete the .reg file on the desktop. If the change you made is not desirable, then your backup will come handy. Double-click on the registry file backed up on the desktop—it will restore the registry to its previous state.

Windows 9x has a feature in which after each successful start, a backup of that registry is made and saved. Just in case something does go wrong, this backup can be used to restore the system to a previously known 'good' state.

To restore the registry, restart in

MS-DOS mode and change to the Windows folder,

C:\>cd windows

C:\windows>

Type the following commands and press [Enter] after each one. Note that the extension is .da0 and is the number zero.

attrib -h -r -s system.dat
attrib -h -r -s system.da0
copy system.da0 system.dat
attrib -h -r -s user.dat
attrib -h -r -s user.da0
copy user.da0 user.dat

Now restart your computer. This will restore your registry to when you last successfully started your computer.

Windows 98 has an additional means of backing up the registry. This is done by using the ***scanreg*** command. This command is not available in Windows 95 and NT. Here is what you do:

Restart in MS-DOS mode and run the ***scanreg*** command by typing ***scanreg /backup*** at the command prompt.

The registry will be backed up and will return to DOS prompt. If you need to restore the registry, you have to type the following command in DOS prompt.

scanreg /restore

Scanreg will check your registry and display the list of available backups. Select the backup at the top of your list. This is the backup you made earlier. Press [R] to restore the backup. When the restoration is complete, type ***win*** and press [Enter] to start Windows.

These methods will not work for Windows NT/2000. Windows NT/2000 has additional security protection that prevents this backup from being restored.

Windows NT provides many ways to backup the registry, one of them being the rdisk utility. Go to ***Start > Run*** and type ***rdisk /s***. Click OK and the Saving Configuration window appears. When this is completed, the setup window opens. Click Yes to create an Emergency Repair Disk (ERD). When you have finished following the onscreen prompts, label the disk 'Emergency Repair Disk' and include the current date. Keep this disk along with the three NT setup disks. These will come in handy (the setup disks and the ERD) if Windows NT becomes unbootable.

If you want to restore the registry to its previous state, boot with the first disk of the three Windows NT setup disks. When the computer has booted, click Repair and choose Registry. You will have a choice of which parts of the registry to restore.

In Windows 2000, go to ***Start > Programs > Accessories > System Tools > Backup***. Click on Tool and then on Create an Emergency Repair Disk. When prompted, insert a disk into the floppy drive and click OK. Label this as 'Emergency Repair Disk'.

To restore settings from the ERD, you will need your Windows 2000 CD, the Windows 2000 setup disks, and the ERD. During the restoration process, you can press [F1] for more information about your options. Using the ERD will restore your settings to the time Windows was first installed. Using the setup disks will restore the settings to the last time you updated the setup disks.

Driver Troubles?

Drivers essentially translate commands back and forth between the hardware in question and the operating system, thereby allowing different components of your computer system to work together.

If you haven't installed the right drivers for the right operating system, your hardware will fail to function optimally.

■ For the most part, you will need only the motherboard chipset and graphics card drivers for your system's basic functionality.

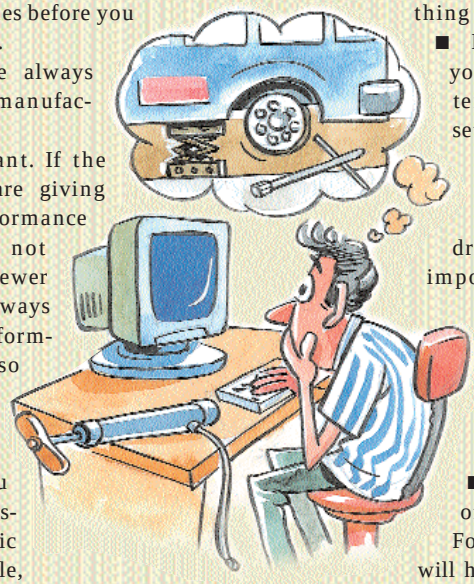
■ Additional CI device or peripheral components will require additional drivers.

■ Remember to install service packs and OS level patches before you install any drivers.

■ All drivers are always available on the manufacturer's Web site.

■ This is important. If the current drivers are giving you optimum performance and stability, do not change them. Newer drivers will always promise better performance but can also have bugs.

■ Always unzip and maintain all the drivers you require for your system in one specific folder. If possible, write them onto a CD-RW which you can keep updating.



Installing and updating drivers

If you plan to install a new device or component then the OS will detect the new device and will prompt for suitable drivers. If the OS fails to show you the newly installed device, you need to manually check the device manager for its presence. If the device manager also does not show any sign of new hardware (with an exclamation mark) then it means that the new device is either not powered on or is not properly seated in the PCI slot.

Usually, the driver that is shipped with the hardware/peripheral is the one that is most reliable. All revisions thereon are just basically fine tuning the core for better performance or stability. Unfortunately, performance is always given priority, sometimes at the cost of stability.

■ Make sure you have successfully downloaded and unzipped (without CRC errors) the new drivers into a temporary directory.

■ If you are upgrading from an older driver, make sure you still have a copy of the old drivers in case something goes wrong.

■ Make a back up of your key Windows system files and registry settings.

■ Read the readme.txt before you install the new drivers. It is very important to go through the readme.txt for a potential heads up on problems that the manufacturer foresees or otherwise.

■ Remove all traces of the older driver. For most drivers you will have an entry in the Add/Remove Programs in the Control Panel. Once you've uninstalled the driver, remove all remaining traces by deleting residue directories.

■ You can now point Windows to the right folder containing the driver and proceed with the installation.

■ For manual upgrades, you will have to go to ***Start > Settings > Control Panel > System > Device Manager***, select Properties for the specific component, and click on update driver. Windows will then lead you through the process.

tips & tricks

Perk up your Windows XP

Some nifty tips that can help you enjoy smooth sailing with Windows XP



ILLUSTRATIONS: Mahesh Benkar

Tips & Tricks
Turn your PC into an audio station
Troubleshooting
FireWire

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20 Third-party tweaks
21 Boosting performance
22 Networking and Internet
24 Miscellaneous

start

INTERFACE AND PERFORMANCE

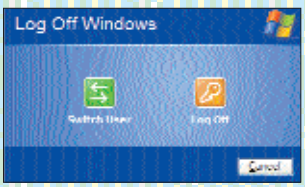
Start off your XP experience with tips on enhancing its looks and performance

Speed up the Start menu

The Start menu takes quite a while to display the list of programs installed. In order to get Windows XP to display the list faster, you will have to edit the registry settings. But before you set about doing this, remember to back up your registry before making any changes. To speed up your Start menu, go to ***Start > Run*** and type ***regedit***. This will open the registry window. Then navigate to the following key: HKEY_CURRENT_USER\Control Panel\Desktop folder. Thereafter, scroll down in the right panel and double-click on the menu 'Show Delay File'. In the Value Data box, change the default value for the menu speed from 400 to a lesser number, such as 1 or even 0. Click OK. You should now find a significant increase in the Start menu speed.

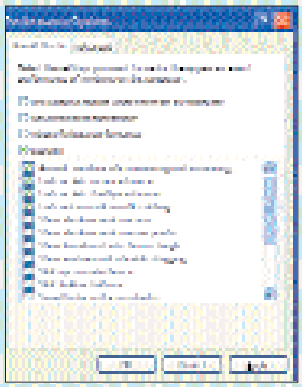
Switching users

XP allows you to switch users without actually quitting programs and logging off. To make use of this, go to ***Start > Log off.*** You will be greeted with an option of 'switching user' wherein another user can log on without you having to quit your program(s).



Modifying visual settings

If you have only 128 MB RAM, your machine might be a bit sluggish after installing Windows XP. So to achieve optimal performance without buying additional RAM, disable certain visual settings and free up some precious memory. Go to the Control Panel, click on the Advanced tab in System, and choose Settings under the Performance option. Change various graphical effects. Uncheck the animation and shadow options as they tend to consume a lot of memory. You should get a better response from your OS now without spending any money on RAM.



Boost performance by reducing visual settings

Enabling/disabling Clear Type text

HOT Tip!

Microsoft has introduced a new technology called 'Clear Type' with Windows XP. However, it is not enabled by default. To enable it, right-click on a blank area of the Desktop and choose Properties. Click on the Appearance Tab and click again on Effects. Check the box 'Use following method to smooth edges of screen fonts' and in the drop-down box select 'Clear Type'.

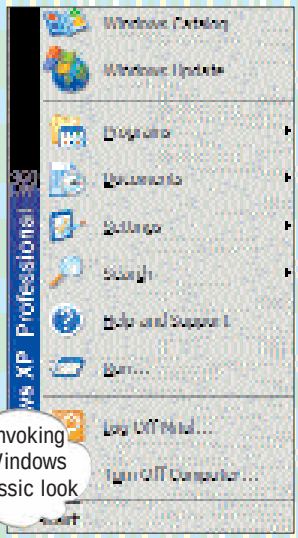
Clearing Document list

The Start menu of Windows XP has been completely revamped and made extremely customisable. If you want the Start menu to display only the applications that you want, right-click in an empty section of the Start menu's left column and select ***Properties > Start menu > Customise***. Then go to the General tab, click on Clear List, and set the counter to zero. Now no one can keep track of the programs or applications you've recently used.



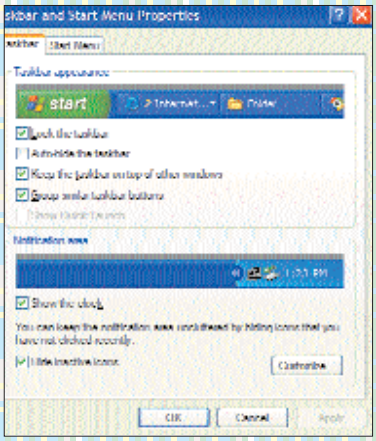
The 'Classic Look'

If you are not comfortable with the new look of Windows XP, you can easily switch back to the old classic look of Windows. Right-click the desktop, select Properties, click the Themes tab and choose Windows Classic from the drop-down list. The old Windows 2000 look is ready.



Grouping/ungrouping taskbar items

Try opening more than three windows of any program, for instance Internet Explorer, and you will see them automatically grouped together under a single button. This happens



Ungrouping the taskbar items

because Windows XP, by default, enables the option for grouping similar programs on the taskbar. To uncheck this option, right-click on a blank area of the Taskbar and select Properties. Under Properties, deselect 'Group Similar Taskbar Buttons', and then click OK.

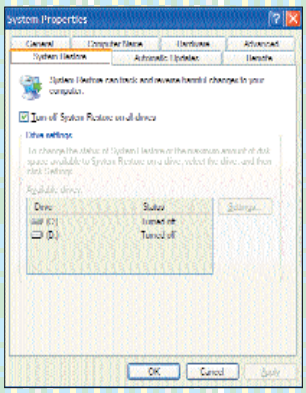
If you want to specify the number of windows before Window XP groups the program windows, you will have to navigate to the registry key HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced\Taskbar Groupsize. Now right-click on Taskbar Groupsize and change the hexadecimal value to whatever you like (for example, 4 or 5 or even 10). XP will now group the programs according to the number you set.

Hiding inactive icons

After installing Windows XP, if you log on to the Internet and surf for a while, you'll find that your Internet icon has disappeared. This is not an indication that you have been disconnected; it merely means the icon is hidden since it's been lying idle in the System tray. If you so wish, you can disable this option by right-clicking on the Taskbar, choosing Properties, and disabling the 'Hide Inactive Icons' option. You can specify the ones you would not like to be hidden.

Disabling Automatic Windows Update and System Restore

There are certain services such as Windows Update and System Restore, which are automatically loaded and occupy a lot of space. If you would like to disable them, right-click on My Computer and choose Properties. Click on the System Restore tab



Disable the System Restore feature

and check the box 'Turn off System Restore'. This will increase Windows performance and save disk space.

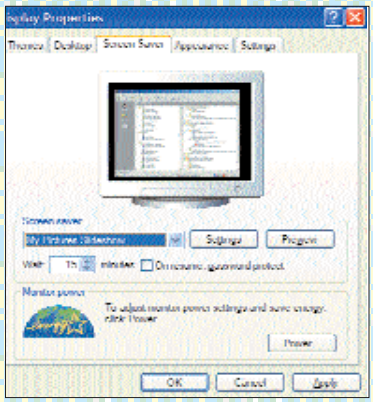
Similarly, locate the 'Automatic Update' option just next to 'System Restore'. This option will periodically ask you to update the OS. You can go ahead and disable this, but remember that you will have to update Windows manually after applying this option since there will be no reminders.

Change the picture on the welcome screen

Want to add your own picture in the Startup menu? Well, who wouldn't? Here is how you go about doing it. Go to ***Start > Control Panel User account > Administrator***. There you will see an option to change the picture on the welcome screen. On clicking it, you will see an option from which you can select the picture already present or you can browse to the folder where you've saved your photograph.

Creating personal screensavers

You can use your photographs for creating slide show presentations or even creating a screensaver. Right-click an empty spot on your desktop, choose Properties, and click the Screensaver tab. In the Screensaver list, click



Use images to create your own personal screensaver

on 'My Pictures Slideshow', and click 'Settings' to make any adjustments such as how often the pictures should change, their size and whether you would like to use transition effects between pictures. Click OK to finish. The screensaver that will now be generated will display photographs from the My Pictures folder in a random manner.



View Images as Filmstrip

Windows XP makes things easier by allowing you to view all images in one go. But in order to do that you will have to go to the folder where the images are stored and then go to ***View > Filmstrip***. The images will be neatly arranged in a straight line just like a filmstrip thus letting you preview each one of them.

start

THIRD-PARTY TWEAK UTILITIES

Here are third-party tweak utilities that allow you to further enhance the performance of Windows XP

Tweak XP

This tweak utility allows you to not only tweak Windows XP but also your system settings. You can optimise your system by freeing RAM, applying tweaks to your CPU, tweaking your Internet settings by blocking advertisements, shredding files, allowing certain programs to be used by certain users only, and so on. With this software you can make your Windows taskbar transparent by going to ***System + Files Tweaks >Make the taskbar transparent***.



Make your taskbar look transparent with Tweak XP

Power Toys

This program bundles a set of small programs such as Tweak UI, Image Resizer, Super Fast User Switcher, Power Calculator, etc which let you perform functions such as switch users without having to go to the logon screen, create graphs and evaluate functions, among others.

Customiser XP

Customiser XP is a special utility designed to optimise the performance of Windows 2000 and XP. Using a graphical user interface, it allows you to modify many hidden Windows registry settings by simply clicking the provided checkboxes. Customiser XP helps you improve your Internet connection as it sets all recommended settings for you at the click of a specified button. It also offers a wide range of possibilities to customise your Windows program, such as choosing a background of your choice at pre-logon and automatically restarting Windows Explorer when it crashes while you're working to avoid losing your work.



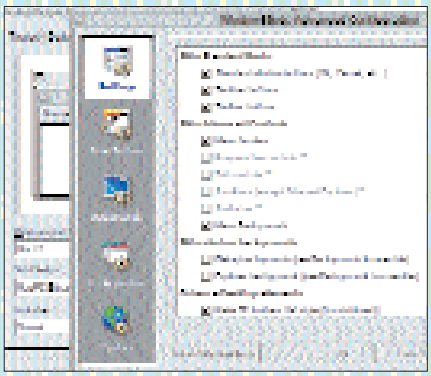
Automatically restart Windows using Customiser XP in case of a crash

Styles XP

Windows XP has a limited set of themes. In order to add more themes you can use Styles XP which provides a good variety of colours and themes. In order to change the various themes supported by this program, right-click on your desktop and go to ***Properties > Themes***, and select a theme of your choice. You can change the colours from the Appearance tab, which is right next to the Themes tab.

Windows Blind

Want to give your OS a Mac look? You can do so through the Windows Blind program. All you need to do is install the program and navigate to the themes. You will find the option for loading a Macintosh theme. If your machine does not have enough memory, put it on enhanced mode or opt for 'High performance' if you have a powerful machine.



Set a Mac theme for Windows with Windows Blind

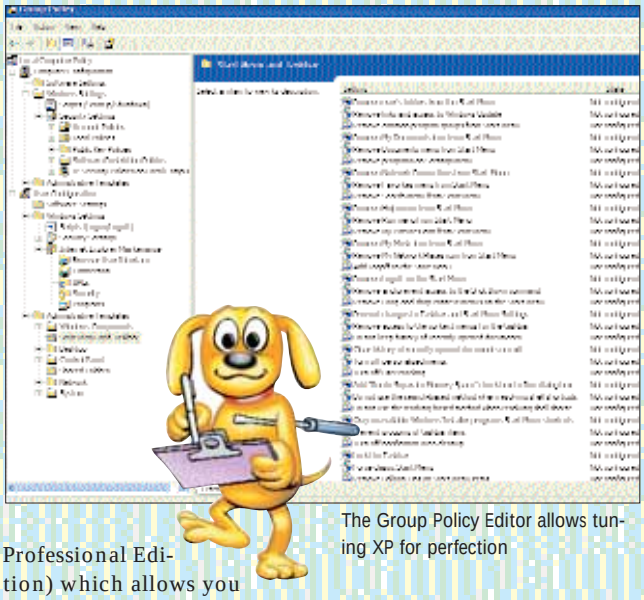
Desktop X

This program lets you build your own customised desktop. As is the case with all third-party software which let you change the style, this one lets you load a particular style as well, except that here you can also edit the style, change the buttons, make particular themes for particular programs, and more. Right-click on the desktop, go to ***Properties > Appearance***, and click on the Windows Blind button. This will let you modify the settings. In case you don't want to use any of the styles but want to keep the program, then just unload Windows Blind.

It's easy to tweak the performance of Windows XP further. All you need to do is follow these instructions

Group Policy Editor

Microsoft bundles a nifty utility (only in the Professional Edition) which allows you to change almost every setting of the OS without having to manually edit the registry. In order to access the program go to ***Start > Run*** and type ***gpedit.msc***. Now you can navigate and change the options as you wish. We have some examples here, but you can also try changing other settings.



The Group Policy Editor allows tuning XP for perfection

Disabling MSN Messenger from starting automatically

Navigate to ***User configuration > Administrative Templates > Windows Components > Windows Messenger***. On the right-hand side, you will find options to change the settings for this program. Click on 'Do not automatically start windows messenger initially' and enable this rule to prevent starting MSN Messenger when you start Windows. This would lessen your boot up time and also save memory.

Disabling Windows update

HOT Tip

If you wish to remove the Windows update option, go to ***User Configuration > Administrative Templates > Windows Components > Windows Update***. You can completely remove this option by enabling 'Remove access to all update features'. Windows will not prompt you to update now and you cannot update manually from the Web site either.

Removing unnecessary options from Task Manager

If you want to remove some options from the Task Manager, navigate to ***User configuration > Administrative Templates > Windows Components > System > Ctrl+Alt+Del option***. In the right-hand pane disable any option that says 'Remove logoff' by checking it.

Customising IE interface

Tired of the same old IE interface? Customise by going to ***User configuration > Internet Explorer Maintenance > Browser User Interface***. Change the browser title name and manually add the name you want to see on the browser. You can even add a customised animated logo and change the background of the toolbar by going to 'Browser toolbar customisation'.

Disable list of startup programs

Want to disable the list of startup programs? Go to ***User Configuration > Administrative Templates > System > Logon*** and enable 'Do not process the run once list'. This prevents programs from starting up automatically, thus giving you a faster boot up time.

Removing inactive icons from system tray

XP hides inactive icons in the system tray by default. In order to remove this facility completely, you will have to navigate to ***User configuration > Administrative templates > Start menu and Taskbar***. On the right-hand side, scroll down to 'Turn off notification area clean up'. Now your icons cannot be hidden at all.

DID YOU KNOW

Remove Burn

XP provides a software for burning. But if you don't have a CD-Writer, disable it by going to ***User configuration >Administrative Templates > Windows Components > Windows Explorer***. Enable the 'Remove CD burning features' option.

DID YOU KNOW

Disk Management

You can create, delete or rename your partitions in Windows XP. Go to ***Control Panel > Performance and Maintenance > Administrative Tools > Computer Management***. You will now be able to access the Disk Management program. Right-click on the hard disk partition and rename or delete it.

start

Services you can use

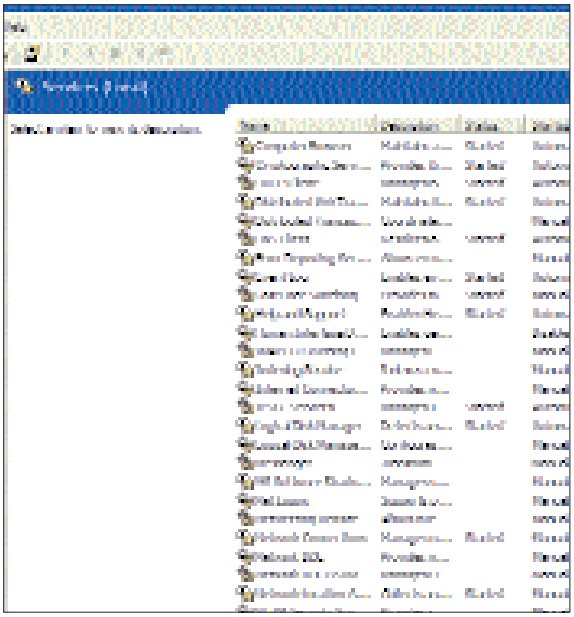
The Services program lets you manually stop or start various services XP offers. If you're a home user not connected to the Internet through a LAN, disable some of the Net-related services which occupy memory, slow down boot up time, and are probably of no use to you. Go to ***Control Panel > Performance and Maintenance > Administrative Tools > Services***. You should make the following services manual (do not disable any service) to free up some of your RAM.

First Time User

- Automatic updates
- Computer browser
- Remote registry
- Windows media time
- Task scheduler
- System event notification
- Indexing service

Advanced User

- Automatic updates
- Computer browser
- Remote registry
- Windows media time
- Task scheduler
- System event notification
- Indexing service
- Error reporting service
- Printer spooler (if you have not installed a printer)
- System restore service
- Portable media player
- Windows image acquisition
- Wireless zero configuration
- Upload manager



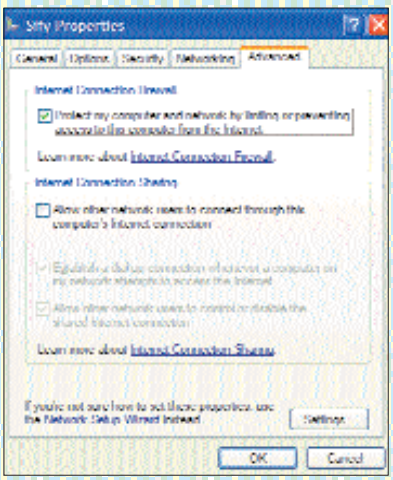
NETWORKING AND INTERNET

Here's how you can get the surfboard up to gear and ride the waves



Turn the firewall on

Microsoft has included a firewall in Windows XP to keep you safe from hackers while on the Net. It's quite easy to enable the firewall. Just click on the dialup icon, which you must have created to dial to your ISP, and go to ***Properties > Advanced***. Now check the box 'Internet Connection Firewall' and you are done.



The Internet Connection Firewall gives protection when you are online

Sharing Internet connection

If you are connected to a network and want to enable Internet connection sharing, it's easy with Windows XP. Simply go to ***Control Panel > Network Connections*** and click on 'Set up or change your home or small office Internet connection'. A wizard will guide you through the process of creating a connection.

If you want this connection to dial automatically when another computer on your home or small office network attempts to access external resources, check the 'Establish a dial-up connection whenever a computer on my network attempts to access the Internet' check box.

If you want other network users to enable or disable the shared Internet connection, select the 'Allow other network users to control or disable the shared Internet connection' check box.



Direct Help from Microsoft

Get professional help with XP. Go to ***Start > Help*** and click the Support button. It will give you access to help straight from Microsoft, provided you are connected to the Net.

Controlling cookies

Whenever you visit a Web site, it sends a cookie in return, which is placed on your hard disk. Through the cookie, the site may misuse and steal information from your computer. To prevent this, Internet Explorer 6 comes with an option for blocking these cookies. In order to change this option to suit your requirements, right-click on Internet Explorer, go to Properties, and click on the Privacy tab. Here you can select the option you want. For instance, in order to ensure maximum privacy, you can keep it on 'High'—all the cookies that contain your personal information and are sent to third-party Web sites without your consent are now blocked.

Increasing connection speed

Some of us may find that after installing Windows XP, the Internet connection gets slower. A possible reason for this is the QoS (Quality of Service) installed. This service reserves 20 per cent of the bandwidth for itself, even with QoS disabled. In order to remove this reserved quota, you will have to make sure you are logged on as Administrator. Go to ***Start > Run*** and type ***gpedit.msc***. Expand the 'local computer policy' branch, the 'administrative templates' branch, and the 'network' branch. Highlight the 'QoS Packet Scheduler' in the left window and in the right window double-click the 'limit reservable bandwidth' setting. Then, on the Setting tab, check the 'enabled' item and change the 'Bandwidth limit %' to read 0. After doing this, you should immediately notice a boost in your Internet connection speed.

Speeding up network browsing

A bug in Windows 2000 would cause the scheduled tasks folder to be searched whenever the user browses network drives. While Microsoft has developed a fix for this bug, the fix slows down the browsing of Microsoft networks. In order to fix this problem, go to ***Start > Run*** and type in ***regedit***. Navigate to HKEY_LOCAL_MACHINE/Software/Microsoft/Windows/Current Version/Explorer/RemoteComputer/NameSpace. Then find a key named {D6277990-4C6A-11CF-8D87-00AA0060F5BF}. Right-click on it and delete it. Restart the computer and now you will be able to browse the network a lot faster.

Bridging connections

If you'd like to connect two or more computers via LAN, then you should utilise the Network Bridge option provided in Windows XP. There is no configuration required and you do not need to purchase additional hardware such as routers or bridges. IP addressing, address allocation, and name resolution is highly simplified in a single subnet IP network. To use this feature you will have to open Network Connections. Under LAN or High-Speed Internet, select each of the private network connections that you want to be part of the bridge. Right-click one of the highlighted private network connections and click Bridge Connections.

Troubleshooting Program Incompatibility

- **Check the Internet for updates or fixes:** Check the Web site of the program's manufacturer to see if an update or patch is available. Refer to the Microsoft Windows Update Web site to see if a fix is available for the program.
- **Use an Administrator Account to install the program:** Many programs must be installed by using an administrator account. This is because many programs were written for use with Windows 95, Windows 98, Windows 98 Second Edition, or Windows Millennium Edition (Me). These operating systems did not have an administrator or limited user account.
- **Log off all users except the account that will install the program:** The Fast User Switching feature is new to Windows XP and because of this, most older programs were not designed to support this feature. If you have multiple users logged on to the computer, log everyone off except the account that will install the program.
- **Use the Program Compatibility Wizard:** You can use the Program Compatibility Wizard to test your program in different modes (environments) and with various settings. For example, if the program was originally designed to run on Windows 95, set the compatibility mode to Windows 95 and try running your program again. If successful, the program will start in that mode each time. The wizard also prompts you to try different settings, such as switching the display to 256 colours and the screen resolution to 640 by 480 pixels.



MISCELLANEOUS

Some last minute tips on other XP nitty-gritties

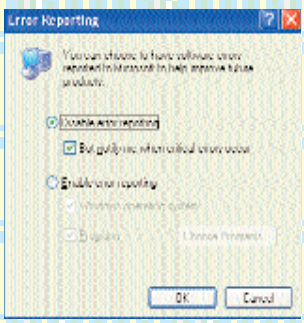
Removing MSN Messenger

How do you remove MSN Messenger in Windows XP? Not from the Add/Remove program list but by locating SYSOC.INF in the \Windows\INF folder (hidden file and folder). Open it in Notepad and locate the line: msmsgs=msgrocm.dll,OcEntry,msmsgs.inf,hide,7

Remove the word 'hide' from the line and save the file. After making the necessary changes, you'll be able to see MSN Messenger in the Add/Remove Windows components list. You can then remove it for good.

Disabling error reporting

Like Windows 2000, even Windows XP provides a report of errors that are generated during a session. For most home users this service might be practically useless. In order to disable it, right-click on the My Computer icon, go to Properties, and click on the Advanced tab. At the bottom of this tab, you will find an 'Error reporting' option. Click it and you will get an option to enable or disable it. Click Disable and you are done.



Get rid of irritating error reporting

Using onscreen keyboard

An onscreen keyboard is inbuilt in Windows XP. It can be useful if you have mobility impairments, especially if you are using a tablet PC or if your keyboard goes on the blink. To access the keyboard, go to Start, click on Run, and type ***osk***. Alternately you can go to ***Start > Run > Programs > Accessories > Accessibility > Onscreen keyboard.*** The keyboard opens up on your computer screen, featuring three typing modes you can use to type data:

Clicking mode: you click the on–screen keys.

Scanning mode: you press a hot key or use a switch-input device to type highlighted characters.

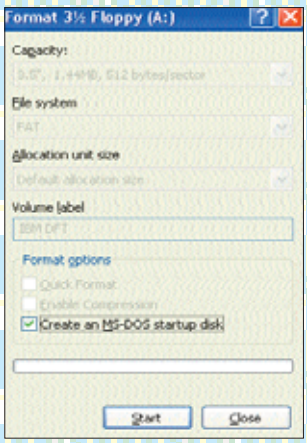
Hovering mode: you use a mouse or joystick to point to a key, which is then typed.

Renaming multiple batch files

In Windows XP, you can easily rename multiple files at a single go and save a lot of time. Click Start and click My Pictures or the folder where you have saved the pictures. Switch the view from the default Filmstrip to Thumbnails by clicking the Views button on the toolbar. Select all the pictures you want to rename by highlighting the last picture you want, then press and hold down the [Shift] key until you include all the pictures that have to be renamed, ending with the first picture in the list. Right-click the first picture, and then click Rename. Rename the first picture, and then click in the white space next to one of the pictures. The pictures are renamed all at once!

Creating boot-up disk

In order to create a bootable floppy disk in XP, insert a floppy and go to the floppy icon in My Computer. There you will have to right-click the floppy drive icon and click on the Format option. You will see the option 'Create MS-DOS Start up Disk'. After creating the boot up disk, you will be able to boot into Windows XP using this disk.



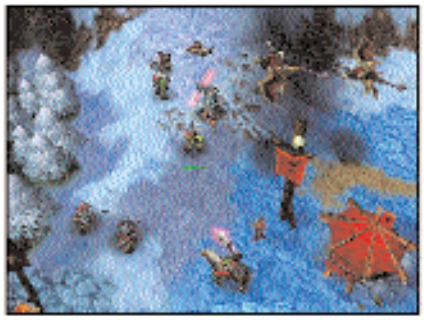
Create a boot-up disk

Remote Desktop Connection

Remote Desktop in Windows XP Professional gives you access to a Windows session running on your PC while you are at another computer. This means, for example, that you can connect to your office computer from home and have access to all your applications, files and network resources. You can view the desktop and programs running on your office PC on your home computer. When you connect to your computer at work, Remote Desktop automatically locks it so no one else can access your applications and files while you are gone. You can later unlock your office PC by pressing [Ctrl] + [Alt] + [Del]. To access this service, go to ***Start > Programs > Accessories > Communications > Remote Desktop Connection***.



SNEAK PEEKS





2002 THE HOTTEST GAMES OF





PC gaming is back with a bang and guarantees to make this year one big head rush

Without a doubt, gaming consoles dominated 2001. With the Xbox, Gamecube and the PlayStation 2 garnering most of the attention, PC gaming took a back seat. While titles such as *Return to Castle Wolfenstein*, *Commandos II* and *Max Payne* made some noise, for the most part 2001 was a pretty quiet year for PC gamers. Older heroes such as *Counter-Strike*, *Red Alert II* and *Quake III* continued with their domination of gaming.

With the hype around the game boxes finally behind us, the spotlight is shifting back to the PC platform. As online gaming continues to gain popularity worldwide, we can expect most of the games to include single and multiplayer action. *Medal of Honor: Allied Assault* made the first draw by coming out in January. Get ready for 2002: the year is chock-full of gaming action.

AGE OF WONDERS II

Fans of real-time strategy games are in for a real treat. *Age of Wonders II* (*AoW II*) packs in even more role-playing components than the previous version. Not only does the title feature totally revamped graphics that boast some radical visuals, it also adds a random map generator and enhanced audio that go a long way in enticing you to play the game over and over again.

AoW II's terrain is incredibly detailed and certain elements such as new and tougher character races have been added to make gameplay more challenging. But the most impressive trait

of this sequel is the map editor which gives you the same tools as developers to create the maps and stories that unfold within them. If you're a fan of myth, magic or plain old tactical combat, *AoW II* will definitely have something for you to chew on.

Genre: Real-time Strategy
Developer: Microsoft
Estimated release date: Second quarter of 2002

COUNTER-STRIKE: CONDITION ZERO

After dominating multiplayer gaming for the last couple of years, *Counter-Strike* advances to the desktop—reason enough to cheer for anyone deprived of the thrills of counter-terrorist action against bots and human adversaries.

A robust single-player campaign, improved *Half-Life* graphics engine, superb AI programming and a slew of new weapons make *Counter-Strike: Condition Zero* truly worth the wait. You start as a lowly foot soldier fighting your way through military jungle camps and moving up in the ranks as you bag more and more successful missions.

Just to make life interesting, the game lacks a 'save game' feature, which will make completing each level a real challenge.

Keep your sniper ready for this one.

Genre: Tactical Action FPS

DUKE NUKEM FOREVER



3D Realms hopes to bring the original mean-mouth of PC gaming back to life. Last seen in action during the third chapter of the *Duke* series about six years ago, Duke will take on an old foe in Dr Proton, a cyborg who made an appearance in the first *Duke Nukem* title.

Wondering when it's expected? The official stand on an expected release date has been the same for the last couple of years, during which it moved from using a *Quake II* engine to a more advanced *Unreal*-based graphics engine.

While many feel that the game is vaporware, having already taken 'forever' to make an appearance, Duke, who is one of the original icons of action gaming, never seems to go out of fashion. Duke is forever!

Genre: FPS/Action
Developer: 3D Realms
Estimated release date: Whenever it's ready

GRAND THEFT AUTO III

Driving, adventure and a heavy dose of violence and gore come together, perfectly balanced for your hidden, menacing side.









Developer: Gearbox Software
Estimated release date: Third quarter of 2002

DOOM III

Revisit the sinister and scary, dark and shadowy world that *Doom* unleashed on PCs back in 1995. The single most anticipated game in the foreseeable future comes from the demigods of game development—id Software. New game code builds on the strengths of the OpenGL-based *Quake III* engine and will bring the current generation of gaming hardware (yes, even the GeForce3!) to its knees. Legend has it that the game is being built on prototype graphics hardware running on massive server farms just to emulate the new game engine.



Expect lifelike characters that have never been seen before, as well as gripping single-player missions that have been noticeably absent from the recent id titles.

Cross your fingers and hope that *Doom III* is out by the end of 2002.

Genre: FPS/Action
Developer: id Software
Estimated release date: End 2002

With its unique perspective, *Grand Theft Auto III* (*GTA III*) puts you right in the middle of harm's way while you peddle drugs and kidnap your way to mo' money. The blatantly offensive title has taken a huge step by offering a fully 3D street experience to become one of the best action games yet to arrive for the PC platform. Another first-time highlight in this 'three-quel' is a fast-paced story line with the twists and turns you'd expect from a Pacino flick. The game is expansive; you can spend hundreds of hours roaming the streets and not know where time went. With *GTA III*, you don't have to worry about wetting your pants after getting busted for a hit!

Genre: Arcade/Racing
Developer: Rockstar
Estimated release date: September 2002

HALO

Released on the Xbox last year, *Halo* will cross over to the PC in 2002. This action-adventure title allows players to switch between first-person and third-person perspectives.

You play the part of a cybernetically enhanced commando who is trying to protect the earth from a rampaging alien race called the Covenant. A sci-fi shooter that takes place on a mysterious alien ring-world, *Halo* will have you battling through

amazing indoor and outdoor environments, in vehicles, and on foot with the largest arsenal of futuristic weapons, vehicles, and combat roles of any shooter ever.

Genre: FPS/Action
Developer: Bungie
Estimated release date: Mid-2002

MEDAL OF HONOR: ALLIED ASSAULT

World War II games seem to be the latest fad in shooters, but no other game stands taller in the quest for best FPS of 2002 than *Medal of Honor*: *Allied Assault*. The game goes beyond the run-and-gun theme with an assortment of missions to carry out. The environment is totally immersive and facets of war are highlighted beautifully. There are soldiers everywhere—shouting, giving orders, running for their lives, and fighting. So while you go on sniper hunts, driving tanks and setting up beach heads just like Private Ryan once did, you'll be happy to know that this is just the tip of the iceberg—the fun lies inside.

Genre: Tactical Action
Developer: Electronic Arts
Release date: January 2002






SOLDIER OF FORTUNE II: DOUBLE HELIX

Double Helix is the sequel to the grossly violent FPS hit of the year 2000. You play the part of John Mullins and embark on an intercontinental mission to fight against an organisation of bio-terrorists who plan to unleash a deadly virus on the world's populace.

This anti-terrorist thriller uses the *Quake III: Team Arena* engine. It will offer wannabe warriors with an expanded arsenal and perhaps even a beefed up multiplayer experience. A random scenario generator which lets players create random single-player missions and superior enemy AI will make playing *Soldier of Fortune II* an even greater challenge when it hits the shelves sometime in April 2002.

Genre: FPS/Action
Developer: Raven
Estimated release date: April 2002

UNREAL II



One of the most anticipated titles of this year comes from Epic Games and is the latest reincarnation of the *Unreal* series which is expected in March 2002. The *Unreal II* graphics engine is based on the Direct 3D API and incorporates higher polygon counts and greater detail.

In the elaborate single-player missions, you find yourself caught in the middle of a full-scale interstellar war in a fictional universe. You have to fight your way through to discover the source of conflict and bring peace to the universe.

In addition to the gripping single-player missions, gamers expect *Unreal II* to include the gripping multiplayer component that made *Unreal Tournament* a smash hit.

Genre: FPS/Action
Developer: Epic Games
Estimated release date: March 2002

WARCRAFT III

In a poll at ***Voodooextreme.com***, Blizzard ranked as the most respected game development outfit among gamers. For anyone who's been impressed by Blizzard's line up of games, there's bound to be profound anticipation when *WarCraft III* comes out. Remember, these guys made *Diablo*.

It's humans versus creatures, magic mixed with metal, in the third installment of the *WarCraft* franchise. The success behind this series is a perfect blend of real-time strategy with role-playing elements for plenty of zest. In Warcraft III, the game has departed from its 2D platform and entered a full-fledged 3D environment overflowing with smooth and crisp animation.

Generating characters that garner new abilities along with experience and know-how to use them is the key strategy in *WarCraft III*.

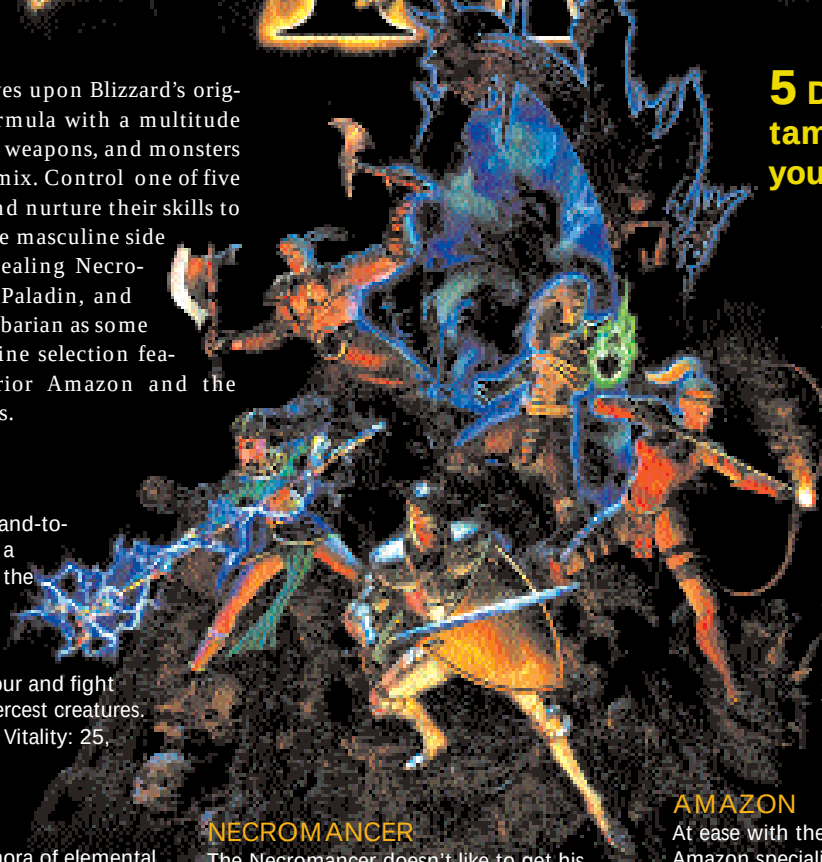
Genre: Real-time Strategy
Developer: Blizzard
Estimated release date: March 2002

This year's harvest is by far the most bountiful as far as the gaming world is concerned. From action to strategy, role-playing to racing—each genre of gaming has evolved many steps further. Not only are the graphics visibly superior than in the earlier games, but the developers have also remembered well the value that gameplay really holds, not to mention the fact that God really does lie in the details.

Also, with the release of next-generation graphics cards from nVidia and ATi, the time couldn't be better for lower-end cards such as the GeForce3 to shed prices for those lean on budgets.

So all of you who had to sit back and wait for a reason to upgrade the GPU, it's time for action! Dust that PC and fire up the graphics card—the gaming drought is over.

Diablo II



Diablo II improves upon Blizzard's original success formula with a multitude of spells, items, weapons, and monsters thrown in the mix. Control one of five diverse, new characters and nurture their skills to their full potential. On the masculine side are the magical, death-dealing Necromancer, the ever-blessed Paladin, and the abnormally strong Barbarian as some of your picks. The feminine selection features the nomadic warrior Amazon and the lethal, yet sultry, Sorceress.

5 Diverse Characters to tame the devil. Choose your destiny!

BARBARIAN

The Barbarian is an ace at hand-to-hand combat and boasts of a multitude of skills including the bash, double swing, leap attack and whirlwind. Seek out the best hand-to-hand weapons, get the best armour and fight toe-to-toe with *Diablo II*'s fiercest creatures.
Strength: 30, Dexterity: 20, Vitality: 25, Energy: 10

PALADIN

The Paladin is a natural party leader, holy man, and blessed warrior. His offensive and defensive auras affect the entire party (within a particular radius)—certainly a bonus against the tougher monsters you'll face in multiplayer games. The key to playing well with the Paladin is to be quick with your hot keys and use him in tandem with other characters.
Strength: 25, Dexterity: 20, Vitality: 25, Energy: 15

SORCERESS

The Sorceress and her plethora of elemental spells fulfil the role of chief magic user. Perhaps the most difficult class to use, particularly early in the game, without access to high amounts of mana and powerful spells. The Sorceress requires patience and tremendous amounts of mana.
Strength: 10, Dexterity: 25, Vitality: 10, Energy: 35

NECROMANCER

The Necromancer doesn't like to get his hands dirty. He summons skeletons, skeleton magi, golems and other creatures in the game. His curses can cause devastating effects on monsters, while his poison and bone spells carry some of the most offensive and defensive powers.
Strength: 15, Dexterity: 25, Vitality: 15, Energy: 25

AMAZON

At ease with the spear, bow and javelin, the Amazon specialises in long-range weaponry. Invest in her skill tree, either with the spear or bow, and watch her stomp out monsters. Hit-and-run attacks work well with the Amazon, while you are dishing it out from long range.
Strength: 20, Dexterity: 25, Vitality: 20, Energy: 15

SRIRAM SHARMA

Single Player Tips

- If your body is surrounded by hordes of baddies, simply rush in and then rush out. Some of them will follow you, allowing you to pick them off one at a time.
- Don't underestimate enemy AI in *Diablo II*. Use smart tactics and hot keys, and don't just run in blind. Stick and move. This may be one of the best tips for real-time RPGs—always attack once, back away, and attack again. This works for incredibly hard bosses and for enemies that have high-attack statistics.
- Use your items. You may die in combat before ever even using them, so it's always better to use your items than to conserve them.
- Communicating with NPCs (non-player characters) can be very helpful on quests. NPCs usually divulge all kinds of information needed for your quest that may help you kill a boss or get a certain item without getting killed.
- Hack and Slash away! Before facing a boss, make certain you are wearing the largest belt you can find or purchase. This will allow you to carry more healing potions, and make certain you are fully stocked. The potions are hot keyed, so punch away. Also, the health that you gain from the potion takes a second or two to actually build up. So make sure you punch early!
- Keep all your gold in your stash box and a backup weapon with armour. So if you die, you can simply grab the extra equipment from the stash box and recover it all in one go.

Playing God

Manage a city or build the ultimate empire. Plus book reviews to help you keep up to date

TROPICO
You rule

From the creators of the famous railway simulation *Railroad Tycoon II*, comes this game with a difference. Take a city management game, give it a deep tan in the Jamaican sun, add some rum and calypso beats and you get *Tropico*. The goal here is to rule a small tropical island. As the 'El Presidente', you take control of the working of your island and further its prosperity along with yours.



Tropico doesn't take itself too seriously. At the start of the game you are given the choice of which dictator you want to play—Fidel Castro, Evita Peron, Pinochet, and well, Lou Bega. Yes, Lou Bega of Mambo No 5 fame. The tongue-in-cheek humour makes the gameplay more absorbing. You might hear one of the citizens moan "Work, sleep, eat, sunbathe, there must be more to life".

You start off with a handful of islanders, and try and build your economy and provide better amenities to your citizens. Soon you change the occupation of the people from farming to those of exports, distilleries, cigar factories and so on. At the same time, you have to meet the demands of the people with entertainment, education and health care. If you don't, there's always another fascist dictator ready to take over. Playing Fidel Castro teaches you a lot of lessons, and it is up to you to use some of Machiavelli's tactics to win.

The graphics are nicely detailed and well-animated, with the ability to zoom right in on individual buildings and people or pull back your view until you can see the entire island below you. The game uses the same graphics engine as *Railroad Tycoon II*, which adapts itself to this game quite well.

The control system uses a fairly simple interface, allowing you to place new buildings, set construction priorities, adjust wages, fees and rents, fire people, issue edicts and limit the number of workers in a particular building. If you can overlook the minor annoyances in the island's economy and trade system, this game is a winner. *Tropico* is a politico-economic simulator and one of the best city building simulations in recent years. For any of you who have harboured secret ambitions of being a dictator, this game can give you vicarious pleasure.

Developer: PopTop Software
Genre: Strategy/Management
Contact: E-xpress Interactive, 022-887 0017
Web site: www.poptop.com/Tropico.htm
Price: Rs 699
Rating: ★★★★☆

CIVILIZATION III
Electrifying!

To call *Civilization III* a game is like looking at the ocean and saying that the water is wet. There are strategy games, and then there's 'the *Civilization* experience'. Crafted by Sid Meier, the creative genius behind *Civilization* and *Alpha Centauri*, here's a sequel that continues the highly addictive journey through history.

Civilization III is a game of epic proportions where players can match their wits against the greatest leaders of the world in an all-out quest to build the ultimate empire. Elements such as Culture, Nationality and the Arts can help players plan a new peaceful pathway to victory. The concepts of borders and a living map have advanced significantly since *Alpha Centauri*. Winning the game is not dependent on military power, but rather on culture. A 3,000-year-old city with an ancient coliseum, cathedral, library and university will have a higher culture rating, whereas a new backwater village with a small temple will barely register.



You can lure people from other countries around you simply on the basis of the strength of your culture. With enough ➜

culture pushing your borders outwards, they can swallow neighboring cities, bringing them under your flag.

The game is turn-based, which makes it slower and more longwinded than the new run of real time strategy games. While a game such as *Command and Conquer* allows you to manage a whole bunch of things at the same time, the turn-based element will bog you down with micro-management, especially during the later stages of the game. The gameplay though slow is challenging and compelling, like a game of chess.

The game ships with a decent and weighty (200 pages) manual with a lot of tips and tactics. The graphics and artwork are top notch too. Firaxis has decided not to go with a multiplayer mode, although it might be added in later; this is a sore spot, in a way, in this day and age. Everything about this game will endear itself to fans of the turn-based genre.

Developer: Firaxis
Genre: Strategy/Management
Contact: Milestone Interactive
Phone: 022-8381614
Web site: www.civilizationIII.com
Price: Rs 1,299
Rating: ★★★★½

STEP BY STEP HOME NETWORKING WITH WINDOWS XP

Simplifying Networking

Windows XP makes a genuine attempt to bring networking out of its realm of confusion and onto the desks of home users. Though the informed user will celebrate the improvements in XP's ability, it's the home users at large who still find the whole thing arcane, rigid and way over their heads.



For those looking for a clear and easy to understand guide, this book is an excellent purchase, only if you're fresh and new to computers. The book rivets down the basics starting with what a network is and does, and leads you through to the practice of simple network security. The book hides the heaviness of its subject with its liberal use of images and large type, and is phrased in a way that is easy to understand.

This Windows-centric handbook makes a good accessory for the software, giving helping tips and advice to consider.

If you know your way around XP and know a little something about networking, you might want to look the other way. Beginners though, can think of it as a primer designed to edify you in the fundamentals of home networking.

Publisher: Prentice-Hall of India Private Limited
Contact: Computer Book Shop
Phone: 022-2070989/2076556
E-mail: cbsbom@giasbm01.vsnl.net.in
Price: Rs 395
Rating: ★★★

MICROSOFT ACCESS 2002 PLAIN & SIMPLE

Access as Simple as Possible

Are you looking for a simplistic and explanatory guide to learn Access 2002? Then this is just the book to get hold of. Kick start your learning exercise with concise and lucid explanations on how to create databases using Access 2002. The first section of the book deals with databases, the second with interface creation and the third is about building Web interactive databases.



And if you're the kind to fret over computerese, this book is a no jargon guide and explains everything in simple and easy-to-understand language. Learn all about creating forms and reports in a jiffy. This book is an all user guide and applies to all levels of readers.

A good companion for those of you looking to embark on a database voyage!

Publisher: Prentice-Hall of India Private Limited
Contact: Computer Book Shop
Phone: 022-2070989/2076556
E-mail: cbsbom@giasbm01.vsnl.net.in
Price: Rs 225
Rating: ★★★

ENHANCED A+ GUIDE TO MAINTAINING YOUR PC

Get to know your PC

Although the title may scare you off, this is a very good book for A+ certification aspirants. It manages to address almost all the objectives that are required for the A+ Core and OS exams. Even if you don't want to do an A+ certification, this book is an excellent guide for getting to know and resolving your PC's hardware and software problems. All the important steps have been clearly explained in detail with excellent photos and screenshots to ensure that you don't goof up. Distributed over 20 chapters, the book starts right from the basics of computer operations and moves on to hardware, troubleshooting, software problems, networking and Internet fundamentals, building a PC, etc. It also comes with a CD that has course preparation software similar to the online examination. Nuts & Bolts 98 is a good utility on the CD that helps you practice what you've learnt on the practical level. A+ certification won't be that much of a problem with this book as a starting point.



Publisher: Thomson Learning
Contact: Computer BookShop
Phone: 022-2070989, 2076356
E-mail: cbsbom@giasbm01.vsnl.net.in
Price: Rs 817.60
Rating: ★★★★

How to score over those who swear by the searching prowess of Google



Everybody uses Google. Probably the only search engine to have inspired verbs like 'googled' (when you scour the Net for stuff on that handsome boy you once met) or 'Google whacking' where you tempt Google with unique entries that return only one result. But your quest for knowledge need not be limited only to the pages indexed by Google. Other search engines have tiptoed into the search domain and have, at some point, even been touted as Google-killers.

www.vivisimo.com

Vivisimo (Spanish for very lively, clever), is a search service with a unique ability of indexing and clustering your search results. Vivisimo prevents you from link overloads and takes you directly to the information you need. Type a query, the software calls other search engines (most major ones, a few government sites, and many corporate, news and university sites), extracts relevant information (titles, URLs, and short descriptions) and groups the results. Which means you do not have to go through each and every result thrown up by the search to find the one that fits the context you are keen on. Also, the results that would otherwise be buried deep come into easy view. Another plus is the 'open in new window' button which is a great tedium-reducer, one-right-click-less option.

www.wisenut.com

Type a question in the query box of WiseNut and the answer pops up in the headline or description of documents, so if you do not need more information, there is no need to click any of the results. For those who want to delve deeper, WiseNut organises results into neat folders, and even offers you a sneak-a-peak view, in which the home page of the results shows up within a window within the search results window itself. You can move on if the page does not match your interest. WiseNut claims to index 50 million Web documents a day. You can keep track of its progress by looking at the top left corner of the home page—it read '1,571,413,207 Web pages and counting' the last time we stopped by.

www.teoma.com

Teoma, derived from the Gaelic word for expert, takes Google's searching strategy to a higher rung—it ranks your search results based on topical directories created by experts, which translates to more usable searches from a user perspective. The results to any query will not only get you Web pages neatly classified into folders and a ranked list of Web pages (the way Google does) but also recommended 10 'expert links' specially created or favoured by the enthusiasts on the subject.

The same sparse look of Google shows up in Teoma. Its home page loads quickly, the results are delivered quickly. The main limitation, however, is that the index is relatively small at about 100 million pages (Google is close to 1.5 billion). Also, Teoma is currently in public Beta release. It is possible that the current site may not be the incarnation that survives.

www.ilor.com

iLOR, which calls itself a research engine, combines the power and relevancy of Google's results with some nifty features that searchers are bound to love. Hover the mouse over the listings and 'LORlinks' show up. The 'Put In My List' option adds the listings to a new browser window allowing you to pick out the listings that interest you to build a custom list. The 'Go Now' option 'anchors' you to the original search results; use the anchor window to get back instantly to the original search results. Click on 'Open In Task Bar' option and iLOR opens the listing in a new window, but immediately minimises the window, so you can still see the original results list.

www.surfwax.com

Surfwax searches 14 leading search services, including Northern Light, and handles syntax reasonably well. But what makes it useworthy is its unique display of results (just titles), summaries of some pages (SiteSnap), and focus words to aid in refining the search. This meta search engine analyses both the search statement to create FocusWords—the lists of words that pick out the main topics and concepts and then displays results, offers a definition and sets of broader and narrower words for each. Another amazing feature is SiteSnaps—you click on the lens icon in the results page and on the right half of the page, you get to see a 'snap' of the result page.

Team's Top Picks



Bimal Unnikrishan is the video guy—the director, filmmaker and digital artist—all rolled into one; the man who does all of Jasubhai Digital Media's shoots, ad films, animation, you name it. This time, with some prodding, he divulges his favourite picks from the Web on

www.abcdv.com
Dedicated to the DV filmmaking community. Includes news, updates, shooting and equipment reviews.
www.adobe.com/motion/main.html
An information warehouse full of case studies, demo software, and tutorials for the initiated and uninitiated.
www.dv.com
A brilliant forum for creative professionals to learn new visual communication techniques.



Dv.com offers a forum for pros

www.creative-cow.net
A relatively new forum for professional ideas and techniques with a close-knit community where bonhomie cuts across professionals and geographical boundaries.
www.belief.com
Renowned Santa Monica-based design house with their work mantra as "Immerse in sensory culture." The videos are worth checking out.



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Also Mentionable
www.methodstudios.com: Design studio (videos)
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www.spon.com: Spontaneous combustion (Design house)
www.2-pop.com: Resource forum (like abcdv)
www.videography.com: Magazine home page
www.365post.com: Resource forum
www.epanorama.net/links/video.html: Descriptive encyclopaedia of video technology

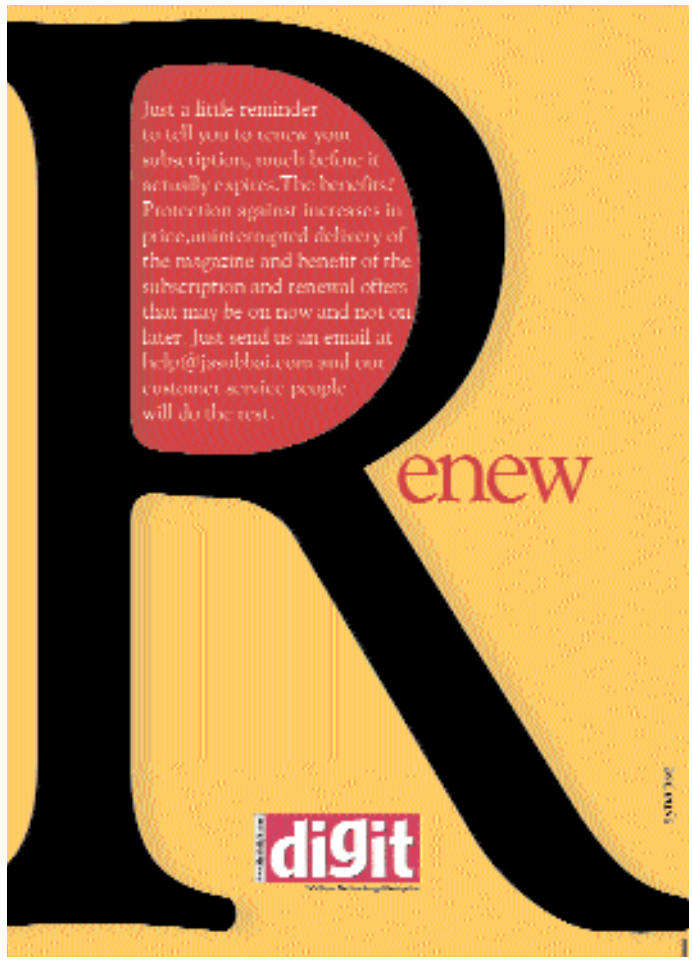
OLD WAY

TECHWAY

Gaining an education

Think back to your school days—acquiring knowledge on all and sundry was a passion. But in order to fulfill this desire your most viable option was spending your parents' hard earned money on expensive books such as the entire *Encyclopaedia Britannica* series so you could get an insight on how a grenade works!

Acquiring knowledge is still a passion. But now you're reluctant to spend your own hard earned money! Never fear though, for you can find a vast repository of information on the Net. Provided you own a PC or have access to one at a nearby cybercafe, you can now feed your grey cells by simply logging on to sites such as ***www.howstuffworks.com***!



NETEACTS

Bandwidth-hungry *kya*?

If there's one thing we'd agree on, then it would be the fact that we're pathetically short of bandwidth in India, right? Wrong!

Nasscom has a totally different viewpoint. It says India is swimming in an excess pool of bandwidth, that the country has a whole of 1.2 GBps of bandwidth and is not using it in the first place! Well, is it a surprise that with the cost of setting up an infrastructure and leased lines the country's bandwidth lies under-utilised? Perhaps the surprising part is that this still doesn't stop us from crying hoarse about our bandwidth requirements, right?

Ban(ne)dwidth

Give a Digster surprise assignments, housekeeping missions involving tagging and organising the huge stock of magazines and three stories to finish in a week...but waning bandwidth is a little too much!

Access to the Internet for a Digster is tantamount to a continuous supply of oxygen. Writers often carry out vast amounts of research on the Internet before conducting interviews and trying out products for their stories and lack of bandwidth or even low bandwidth can seriously throw a spanner in the works.

Digsters who pride themselves at being the first ones to download the latest software every time found their style somewhat cramped this month as even browsing turned into a difficult proposition when our T1 lines went on the blink. It was worse for our Multimedia team who found themselves working on dial-up lines for the CD content of the March 2002 Digit issue. Add to that the fact that one of our cover stories required downloading and trying out several freeware before we shortlisted 30 of the best, and you'll see how much it hurt.

Our hardworking warriors were of course up to the challenge of making do with less. Time management acquired a new meaning with people coming in at all odd hours to catch, nay trap bandwidth when fewer people were likely to be online. Every little trick in the trade was tried in order to get work done and not let schedules slip, punctuated ever so often with roars of frustration and uproars of anguish at the floundering Net connection.

Frayed nerves soon gave way to jokes as the folks at Digit refused to let the situation get the better of them. We overheard a writer telling another on a particularly slow day, "Let the page load and go home. It'll be complete by tomorrow afternoon." Nor was the entrepreneurial spirit lacking. We found this little note placed on a PC saying, "Put cash on table before you check mail or browse".

Meanwhile, our IT team got working on the problem. A new proxy server was set up and provided some respite in the interim. Well, now that things are back to normal, all those who live by the motto, "will work for bandwidth" are happy again.

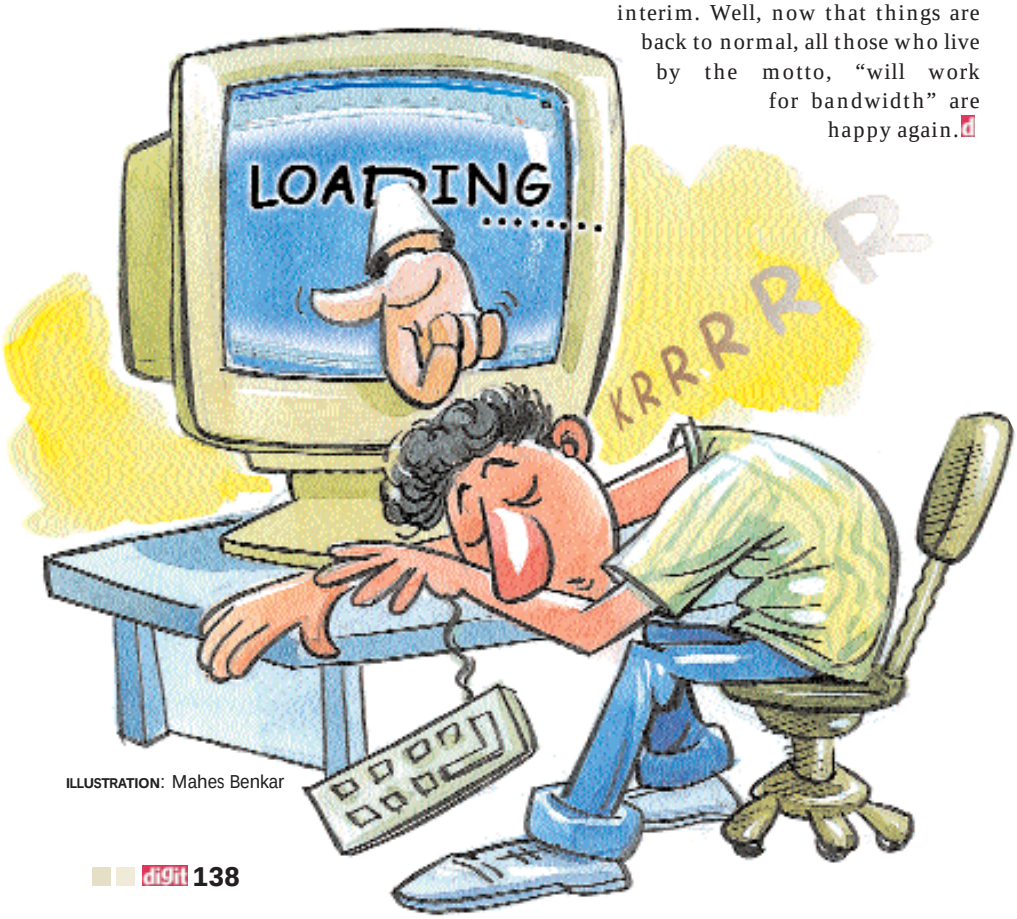


ILLUSTRATION: Mahes Benkar

Awww Hex!

There's a strange trend going on at Digit. Now we're not really superstitious, but of late our cover stories seem to be plaguing us in real life! When working on our January issue we had to 'virus proof' ourselves against a common cold virus that took a cue from our cover story and sought out the chinks in our armour.

Well, this month the jinx continued. If you're reading this bit then you know that one of our cover stories is 'The PC Troubleshooting Guide' by our Test Centre. Any story that involves the Test Centre doesn't see the light of day unless it's been thoroughly scrutinised. So what better way to serve up a comprehensive troubleshooting guide than to actually get your hands dirty fixing problems with your own PC? The only thing wrong here was that this wasn't included in the initial storyboard!

The first unlucky Digster was Hatim, who had to deal with successive processor malfunctions. The next to fall prey was one of our most heavily relied on designers, Shiva, who just couldn't keep his QuarkXPress from acting up. But not one to be easily frazzled, he confronted the problem by simply yelling out a warning, "Restarting!", to all those connected to his PC.

The jinx next struck the Multimedia team when Aichin's hard disk crashed. She is the lady who does the programming for the Digit Interactive CDs and her PC is where all the content is stored. The timing couldn't have been worse—just one day before the Mindware CD was to be sent for replication. Back-ups are a wonderful thing and came in handy. And the entire Multimedia team pitched in to redo all the lost work in one day, without missing a beat.

Well, as the saying goes, 'no rest for the wicked'. But here's a fun thought—maybe we should do a story on 'If personal robots were freeware'!

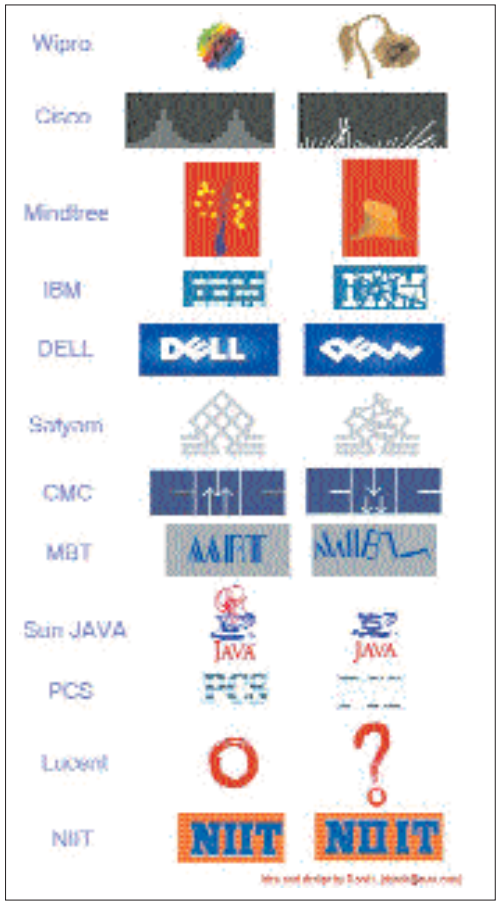
Naming Force

Confused by the bombastic names that nVidia and others insist on christening their graphics crads with? An intrepid gamer takes a dig at nVidia and suggests a simple method of arriving at future names. All you have to do is put together a combination using the formula, nVidia + A + B + C + D + E to make your own killer card!

A	B	C	D	E
Geforce 5	Frenzy	Ti 300	MX	Ultra
RDX	Fury	Ti 500	DDR	Deluxe
Napalm		ZI30	XP	Pro
Nitroglycerine		Fx2!!!	BS	Exxtreme
Gixpix		TFT20	LOL	Blaster
Dominator			ROTFLOL	
Hellkite				

Contributed by Sriram Sharma

Slowdown Blues?



Contributed by Leena Nair



ISP Muscle



A rose by any other name may smell just as sweet, but we aren't too sure the same can be said for BSNL (Bharat Sanchar Nigam Limited). Look where the URL, bsnl.com, landed us.

Contributed by Anil Patrick R.

A PC Pick-me-up



Secret formula for perking up a sluggish machine.

Contributed by Harsh Priyadarshy

Your chance to bite back!

Highlight the lighter side of computing. Mail your contributions to Backbyte
Digit, Plot D-222/2,
TTC Industrial Area, MIDC,
Shirvane, Nerul,
Navi Mumbai 400 706
or send e-mail to
backbyte@jasubhai.com

Ode to a Virus

A computer virus as easy as sin
Is gotten fast, as cheap as gin
It drains time, wracks your nerves
It will make you fall short on reserves
In numbers uncountable, in size small
A virus has one treatment for all
"Badtimes" or "Badtrans", a worm or a Trojan
It likes to wipe your files, maybe even forge 'em

It was just another ordinary day
Morning rituals—shave and check mail
Common habits of every modern male
The air we breathe, the food we eat
The daily clicks—send and delete
Who'd guess that a day can be easily spoiled
By a quiet worm so silently coiled?

I did not expect for my system to fold
Apparently, Norton was little too old
Not only did the bug worm its way into my files
It reset my balance, my emotions, my lifestyle

Repairs are costly, support never helps
I pleaded, I cried, and I whelped
Pacing like a tiger around the dark room
Visualizing all around a descending doom

10 hours later I'm still on "Support"
They come on with "Thank you for being a sport
What can we do? You were so patient...
Virus? Sircam? Oh, but that's so ancient!"

They finally found 12 files, is that better?
What you do next does not really matter,
You must reinstall, no questions asked
Yes, I know, it's a Machiavellian task

"Oh, and by the way, for reinstallation
We won't charge much, and you were so patient.
We respect and keep our clients sane
You see, they never complain."

There's never any reason, no matter who gets hit
Is there any sense in this Web, a virulent pit?
I woke up screaming from this nightmare
Hoping the Web be more than just viruses and software

by Lena